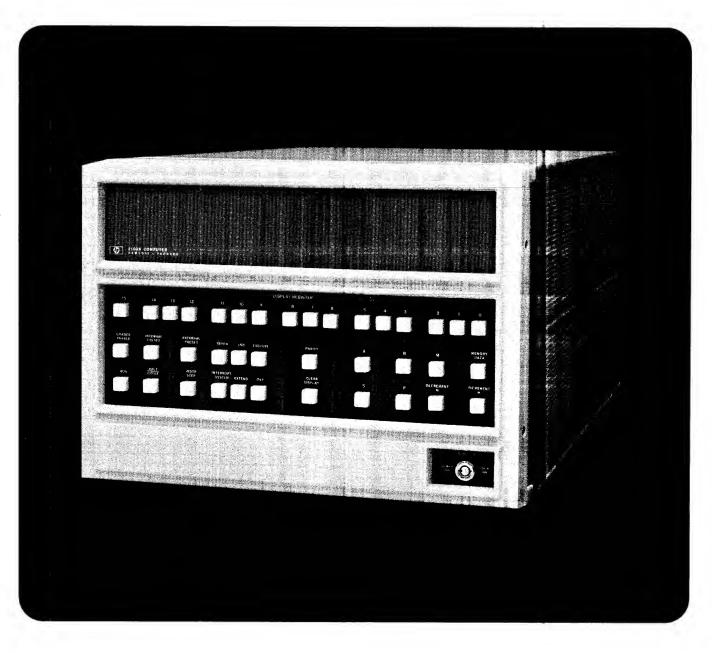


2100A computer



diagrams manual

CERTIFICATION

The Hewlett-Packard Company certifies that this instrument was thoroughly tested and inspected and found to meet its published specifications when it was shipped from the factory. The Hewlett-Packard Company further certifies that its calibration measurements are traceable to the U.S. National Bureau of Standards to the extent allowed by the Bureau's calibration facility.

DIAGRAMS MANUAL

MODEL 2100A COMPUTER

SERIAL NUMBERS COVERED

This manual applies directly to Model 2100A Computers having serial numbers prefixed 1136, 1140, 1145, 1146, 1147, 1148, 1150, 1202, 1203, 1215, 1224, 1230, 1238, 1243, 1244, 1249, 1250, 1304, 1306, 1312, 1314, 1320, 1322, 1330, 1333, 1345, 1402, 1410, 1420, 1435, and 1449. Computers with higher prefix numbers will be covered in manual updating supplements.

OPTIONS COVERED

This manual covers options 001, 004, 008, 012, 015, 016, 024, and 032 as well as the basic computer.

ACCESSORIES COVERED

This manual covers the following accessory kits:

12884A, 12884A-001 and 12884A-002 Memory (4K Increments) Accessory Kits

12885A, 12885A-001, 12885A-002, 12885A-003, and 12885A-004 Memory (8K Increments)
Accessory Kits

12895A Direct Memory Access Accessory Kit

12899A Operator Panel Accessory Kit

12901A Floating-Point Hardware Accessory Kit

PRINTED: JAN 1975

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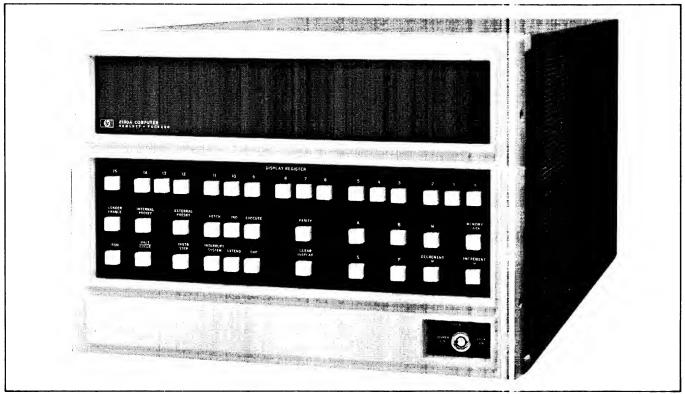
GENERAL INFORMATION



1-1. INTRODUCTION.

- 1-2. This Diagrams Manual, part no. 02100-90003, is one in a set of five manuals that document the Hewlett-Packard 2100A Computer (figure 1-1). The other manuals in the series are: the Power Supply Operating and Service Manual, part no. 5951-3038, the Reference Manual, part no. 02100-90001, the Installation and Maintenance Manual, part no. 02100-90002, and the Illustrated Parts Breakdown (IPB), part no. 02100-90004. The computer is documented in the five manuals as follows:
- a. This Diagrams Manual provides interconnecting information and schematic diagrams for all assemblies of the computer except the power supply.
- b. The Power Supply Manual contains all the information necessary to troubleshoot and repair the power supply. This includes installation instructions, schematic diagrams, and replaceable parts information.

- c. The Reference Manual contains specifications, operating instructions, and programming information for the computer.
- d. The Installation and Maintenance Manual contains instructions for installation, maintenance, trouble-shooting, and repair of the computer, except as covered in the Power Supply Manual.
- e. The IPB Manual contains replaceable parts ordering information, replaceable parts lists, exploded views, part location diagrams, and numerical lists of parts for all assemblies of the computer except the power supply.
- 1-3. Unless otherwise stated in future updating supplements, information contained in this manual is applicable to 2100A Computers having serial numbers with the prefixes listed on the title page of this manual.



2133-7

Figure 1-1. Hewlett-Packard 2100A Computer

1-4. SCOPE.

- 1-5. This manual is intended for use by maintenance personnel who are familiar with the circuit theory and maintenance procedures of the 2100A. A thorough understanding of the information presented in the Reference Manual and the Installation and Maintenance Manual for the computer is essential to using the material presented in this manual.
- 1-6. Sections II, III, and IV of this manual contain the following information:
- a. Section II, Logic Symbology. Section II describes and defines the logic symbology used in this manual. It also includes integrated circuit diagrams and characteristics and descriptions of nonstandard integrated circuits.
- Section III, Wiring Information. Section III contains cable wiring information, wiring lists, and wiring diagrams.
- c. Section IV, Diagrams. Section IV contains parts location diagrams, replaceable parts lists, and schematic diagrams for each printed circuit card used in the computer, including the optional memory and control

- cards. Lists of signal interconnections are included to enable quick signal tracing between cards. Use of these lists is described in Section IV. The section also includes an alphabetical list of the signal mnemonics used on the schematic diagrams and in the backplane wiring list.
- d. Updating Supplements. If required, updating supplements are included with this manual. These supplements make the manual applicable to computers with serial numbers prefixed higher than the prefixes given on the title page of this manual.

1-7. MAJOR ASSEMBLY CONFIGURATIONS.

- 1-8. Table 1-1 lists the serial number prefixes of the computers covered by this manual and the date codes of the circuit card and power supply assemblies originally installed in these computers at the factory. (The Identification paragraphs in the computer Installation and Maintenance Manual describe serial number prefixes and circuit-card date codes.)
- 1-9. The assembly configurations may vary from those shown in table 1-1 because of field modifications, repairs, or other reasons requiring assembly exchanges.

Table 1-1. Major Assembly Configurations

OMPUTER SERIAL NUMBER	A1	A2	А3	A4	А4	А5	A6	А7	А8	А9	A16	A24	A24	A101 A104 A109 A112	A102 A103 4K CARD	A102 A103 A110 A111	A102 A103 A110 A111	A 105 K,8K MI MORY	A105 A108	A106	A107	A25 POWE SUPPL
PREFIX	02100- 60014	02100- 60002	02100- 60004	02100- 60022		02100- 60001	02100- 60003	02100- 60024	02100- 60007	12895- 60001	02100- 60060	02100- 60015	02100- 60017	02100- 60012	02100- 60040	8K CARD 5060- 8324	8K CARD 5060- 8331	52100- 60008	02100- 60009	02100- 60010	02100- 60011	02100 6005
1136	1116	1106 or 1132	1124	1110	-	1051	1109	1116	1051	1116	1131	1123	1128	1121	1139	1126	-	049	1049	1046	1132	1126 or 1146
1140	1116	1132	1124	1110	_	1051	1109	1116	1051	1116	1131	1123	1128	1121 or 1132	1139	1126 or 1136	-	049	1049	1046	1132	1141
1145	1116	1132	1124	1110		1051	1109	1116	1051	1116	1131	1123	1128	1121 or 1132	1139	1126 or 1136	_	1049	1049	1046	1132	1141
1146	1116	1132 or 1144	1124	1110	-	1051	1109	1116	1051	1116	1131	1123	1128	1121 or 1132	1139	1126 or 1136	-	049	1049	1046	1132	114
1147	1116	1132 or 1144	1124	1110	-	1051	1109	1116	1051	1116	1131	1123	1128	1132	1139	1136	-	049	1049	1046	1132	1146
1148	1116	1144	1124	1140	-	1051	1140	1144	1051	1116	1131	1123	1128	1132	1139	1136	_	049	1049	1046	1132	1148 or
1150	1116	1144	1124	1140		1051	1140	1144	1051	1116 or 1144	1131	1123	112 8 or 1201	1132	1139	1136	-	049	1049	1046	1132	1149
1202	1116	1144	1124	1140		1051	1202	1144	1051	1144	1131	1123	1201	1132 or 1152	1139	1136	_	049	1049	1046	1132	1150
1203	1116	1144	1124 oı 1144	1140	-	1051	1202	1144	1051	1144	1131	1123	1201	1152	1139	1136	1208	E049	1049	1046	1132	1150
1215	1116	1144	1144	1140		1051	1202	1215	1051	1144	1131	1123	1201	1152	1139	1136	1208	: н9	1049	1046	1132	1215
1224	1116 oi 1144	1144	1144	1140	-	1051	1202	1215	1051 or 1216	1144	1131	1123	1201	1152	1139 or 1148		1208	049	1049	1046	1132	1220
1230	1144	1144	1144	1140		1051	1238	1215	1216	1144	1131	1123	1201	1152	1148	-	1208	019	1049	1046	1132	1220
123 8	1144	1144	1144	1140	in is	1051	1238	1215	1216	1144	1131	1123	1201	1152	1148		1208	049	1049	1046	1132	1229
1243	1144	1144	1144	1140		1051	1238	1215	1216	1144	1131	1123	1201	1152	1148		1208	149	1049	1046	1132	1243
1244	1144	1144	1144	1140		1051	1238	1215	1216	1144	1131	1244	1201	1152	1148		1208	1.149	1049	1046	1132	124
1249	1144	1144	1144	1140		1051	1238	1215	1216	1144	1131	1244	1201	1152	1:48		1208	349	1049	1046	1132	124
1250	1144	1144	1144	1140		1051	1238	1215	1216	1144	1131	1244	1201	1152	1148	0	1208	м9	1049	1046	1132	125
1304	1144	1144	1144	1144		1051	1238	1215	1216	1144	1131	1244	1201	1152	1148		1208	<u>*</u> 1049	1049	1046	1132	1250
1306	1144	1144	1144	1144	-	1051	1238	1215	1216	1144	1131	1244	1201	1152	1148	*	1301	7-149	1049	1046	1132	125
1312	1144	1144	1144	1144	-	1051	1238	1215	1216	1144	1131	1244	1201	1152	1148	-	1301	h 149	1049	1046	1312	125
1314	1144	1144	1144	1144	-	1051	1238	1215	1216	1144	1131	1244	1201	1152	1148	-	1301	h:)49	1049	1046	1312	1314
1320	1144	1144	1144	1144		1051	1238	1215	1216	1144	1131	1244	1201	1152	1148		1301	1:149	1049	1046	1312	1320
1322	1144	1144	1144	1144	-	1051	1238	1215	1216	1144	1131	1244	1201	1152	1148		1301	11:149	1049	1046	1312	132
1330	1144	1144	1144	1144	-	1051	1238	1215	1216	1144	1131	1244	1201	1152	1148		1301	1 149	1049	1046	1312	133
1333	1144	1144	1144	1144	-	1051	1238	1215	1216	1144	1131	1244	1201	1152	1148		1301	11149	1049	1046	1312	1333
1345	1144	1144	1144	-	1333	1051	1238	1215	1216	1144	1131	1244	1201	1152	1148	-	1301	1:149	1049	1046	1312	134!
1402	1144	1144	1144	-	1402	1051	1238	1215	1216	1144	1131	1244	1201	1152	1148	-	1301	1-149	1049	1046	1312	1345

2191-1D (Sheet 1 of 2)

Table 1-1. Major Assembly Configurations (Continued)

COMPUTER SERIAL NUMBER PREFIX	A1 02100- 60014	A2 02100- 60002	A3 02100- 60004	02100- 60022	A4 02100- 60112		A6 02100- 60003	A7 02100 60024		A9 12895- 60001	A16 02100- 60060		A24 02100 60017	A101 A104 A109 A112 02100 60012	A102 A103 4K CARD 02100 60040	A102 A103 A110 A111 8K CARD 5060 8324	A102 A103 A110 A111 8K CARD 5060- 8331	A105 4K,8K MEMORY 02100- 60008	A105 A108 02100- 60009	A106 02100- 60010	02100- 60011	A25 POWER SUPPLY 02100- 60053
1410	1144	1144	1144	-	1402	1051	1238	1215	1216	1144	1131	1244	1201	1410	1148	1	1301	1049	1049	1046	1312	1410
1420	1144	1144	1144		1402	1051	1238	1215	1216	1144	1131	1244	1201	1410	1148	-	1301	1049	1049	1046	1312	1420
1435	1144	1144	1144		1402	1051	1238	1215	1216	1144	1131	1244	1201	1410	1148	-	1301	1049	1049	1046	1312	1435
1449 (NOTE 2)	1144	1144	1144		1402	1051	1238	1215	1216	1144	1131	1244	1201	1410	1148		1301	1049	1049	1046	1312	1435

NOTES 1 A separate Operating and Service Manual, part number 5951 3038, is supplied for the A25 Power Supply Assembly.

^{2.} Wire type of backplane wiring changed to reduce noise levels. No other assemblies were changed

^{2191 1}E (Sheet 2 of 2)

2-1. INTRODUCTION.

- 2-2. Three basic symbol shapes distinguish the major classes of logic circuits depicted in this manual. These classes are gates, regenerative switching elements, and amplifiers. Each symbol, and a brief explanation of its operation, is given below. Additional markings on the basic symbols aid in determining actual circuit operation.
- 2-3. In addition to the basic symbols, a general multipurpose symbol is used wherever a standardized logic symbol does not exist. A brief explanation of this multipurpose symbol is included below. Following the logic descriptions are a table of integrated circuit characteristics and a set of integrated circuit diagrams.

2-4. INVERSION.

2-5. Logic inversion is indicated by an inversion dot at the input or output of a logic symbol. When this dot appears at the input of a logic symbol, the input will be effective when the input signal is of the opposite polarity to that normally required. When the dot appears at the output of a logic symbol, the output will be of the opposite polarity to that normally delivered.

2-6. GATES.

- 2-7. A gate is a circuit which produces a binary output when certain input conditions are met. The gate symbol has input lines connecting to the flat side of the symbol, and output lines connecting to the curved side (see figure 2-1). Since the inputs and outputs are easily identifiable, the symbol may be shown left-facing, right-facing, or facing up or down.
- 2-8. There are four basic types of gates, "and," "or," "nand," and "nor," each named for the logic function that it performs. Each of these gates is described below. In addition, a brief explanation of an "expander" gate is given following the descriptions of the basic logic gates.

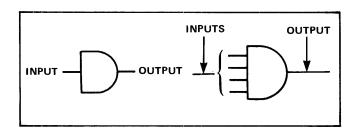


Figure 2-1. Gate Symbols

2-9. "AND" GATE.

2-10. The "and" gate (see figure 2-2) performs a logical "and" function. It will produce a logical-true output only when all of its input lines are true. Input A and input B and input C must be true for a true output to be generated.

	A B C										
Α	В	С	D								
0 0 0 0 1 1 1	0 0 1 1 0 0	0 1 0 1 0 1	0 0 0 0 0 0 0								

Figure 2-2. Three-Input "And" Gate, Logic Symbol and Truth Table

2-11. "OR" GATE.

2-12. The "or" gate (figure 2-3) performs a logical "or" function. It produces a true output when one or more inputs are true. The truth hable in figure 2-3 shows the various states of a three-input "or" gate.

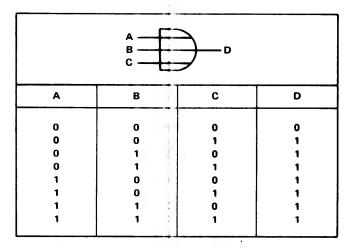


Figure 2-3. Three-Input "Or" Gate, Logic Symbol and Truth Table

2-13. "NAND" GATE.

2-14. The "nand" gate (figure 2-4) is similar to the "and" gate described previously, except that its output is inverted. The gate generates a false output when all inputs are true. The various states of a three-input "nand" gate are shown in the truth table in figure 2-4.

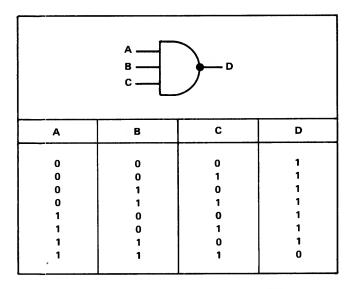


Figure 2-4. Three-Input "Nand" Gate, Logic Symbol and Truth Table

2-15. "NOR" GATE.

2-16. The "nor" gate (figure 2-5) is identical with the "or" gate described previously, except that its output is inverted. The gate generates a false output when one or more inputs are true. The various states of a three-input "nor" gate are shown in the truth table in figure 2-5.

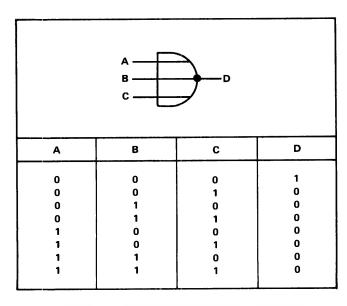


Figure 2-5. Three-Input "Nor" Gate, Logic Symbol and Truth Table

2-17. EXCLUSIVE "OR" GATE.

2-18. The exclusive "or" gate (figure 2-6) is a variation of the basic "or" gate. It has two or more input signals. The output is true when an odd number of inputs are true.

2-19. The truth table in figure 2-6 shows the functioning of a three-input exclusive "or" gate.

	A B C										
A	В	С	D								
0 0 0 0 1 1 1	0 0 1 1 0 0 1	0 1 0 1 0 1	0 1 1 0 1 0 0								

Figure 2-6. Three-Input Exclusive "Or" Gate, Logic Symbol and Truth Table

2-20. It will be noted that operation of the exclusive "or" gate is independent of the electrical polarity of the true and false conditions. The device therefore cannot be described as either positive-true or negative-true.

2-21. EXCLUSIVE "NOR" GATE.

2-22. The exclusive "nor" gate (figure 2-7) is similar to the exclusive "or" gate, except that its output is inverted. The output is therefore true when an even number of inputs are true.

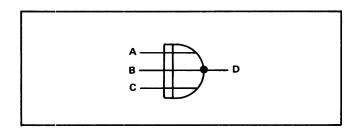


Figure 2-7. Three-Input Exclusive "Nor" Gate, Logic Symbol

2-23. EXPANDER GATE.

2-24. The expander gate provides a means for increasing the number of inputs to a gate Figure 2-8 shows a simplified method of illustrating this type of gate, and figure 2-9 shows the actual connections between the gates involved,

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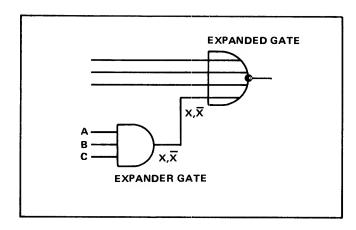


Figure 2-8. Simplified Expander Gate, Logic Symbol

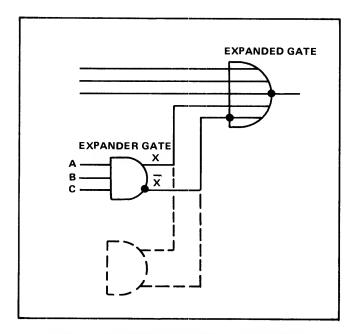


Figure 2-9. Actual Expander Gate, Logic Symbol

The X and \overline{X} outputs of the expander gate are not logical opposites, but they do carry a voltage differential with respect to each other. When one or more inputs to the expander gate are false, there is a voltage difference of a few volts between X and X. When all inputs to the expander gate are true, the voltage difference decreases; the two outputs of the expander then act as a true input to the expanded gate. The actual output-voltage differential of the expander gate depends on the type used.

2-25. When more than one expander gate is used, the gate outputs are connected as in parallel, as shown by the dashed lines in figure 2-9.

2-26. ENCODING GATE.

2-27. The encoding gate (figure 2-10) has one input and multiple outputs. Assuming no inverting dot at input A to the symbol, when the input is true all outputs (B, C, and D)

are true. When the input is false, the outputs are either true or false, in accordance with the state of the logic element to which each is connected.

2-28. A typical circuit for an encoding gate is shown in figure 2-11. With A positive, all diodes conduct and all outputs are clamped positive. With A negative, each diode is practically an open circuit, and points B, C, and D assume the voltage level of the circuit to which each is connected.

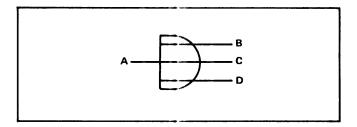


Figure 2-10. Three-Input Encoding Gate, Logic Symbol

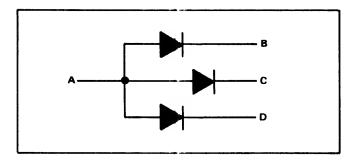


Figure 2-11. Circuit of Typical Encoding Gate

2-29. MULTIVIBRATORS.

2-30. The multivibrators described here are of four main types: flip-flops, Schmitt trigger circuits, one-shot multivibrators, and free-running multivibrators. All furnish a binary output. However, unlike gate circuits, the duration of a multivibrator output signal is not dependent on the duration of an input signal.

2-31. The basic logic symbol for a multivibrator is a retangle (figure 2-12). Letters in the symbol indicate the type of multivibrator. The rectangle is divided horizontally, with the upper portion representing the "set side" of the unit, and the lower portion representing the "clear side". The multivibrator is "set" when the output from the set side is true. It is "clear" or "reset" when the output from the clear side is true. To avoid confusion, the symbol is always oriented as shown in figure 2-12. Inputs are on the left, outputs on the right.

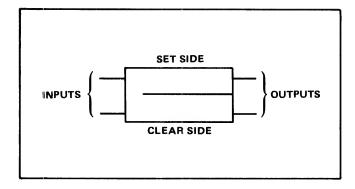


Figure 2-12. Basic Logic Symbol for Multivibrator

2-32. FLIP-FLOP.

2-33. The symbol for a flip-flop is shown in figure 2-13. The letters "FF", preceded by the name of the flip-flop, distinguish this symbol from other types of multivibrators. Additional identification, described later, identifies the particular type of flip-flop.

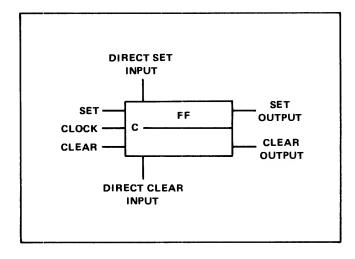


Figure 2-13. Flip-Flop Logic Symbol (General)

2-34. A flip-flop is a bistable switching device; an external signal is required to set the flip-flop, and another to clear it. The flip-flop remains in its current state until switched to the opposite state by the appropriate external signal. Various forms of flip-flop exist, of which seven are described here: the R-S (reset-set), clocked R-S, J-K, clocked J-K, toggle, latch, and delay flip-flops.

2-35. R-S FLIP-FLOP. The symbol for the R-S flip-flop (figure 2-14) can be recognized by the fact that there is no information in the symbol identifying it as one of the other six types. The R-S flip-flop has a minimum of two input terminals (A and B in figure 2-14) and one or two output terminals Q and \overline{Q} . One or two additional input terminals, C and D, may be used.

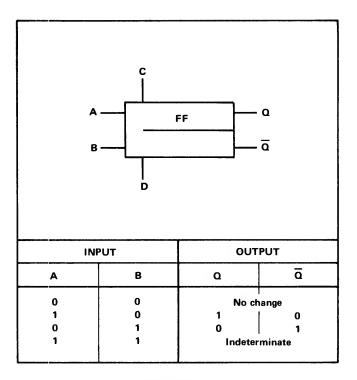


Figure 2-14. R-S Flip-Flop, Logic Symbol and State Table

- 2-36. The R-S flip-flop is set by a true input at A (assuming no inverting dot at this point). It can also be set by a true input at C, if this input terminal is present. The flip-flop is cleared by a true input at B or D. Figure 2-14 includes a state table, showing the flip-flop outputs resulting from various input conditions.
- 2-37. After being set or cleared, the R-S flip-flop remains in that condition after termination of the set or clear pulse. If the flip-flop is either set or clear and it receives an input to place it in the existing state, no change takes place in the flip-flop output signals.
- 2-38. Simultaneous set and clear input signals normally are not permitted, and circuit design usually prevents occurrence of this condition at a time when the flip-flop outputs are used. If simultaneous set and clear inputs are received, both outputs of the flip-flop are true for the duration of the simultaneous inputs. The eventual state of the flip-flop is determined by the input that remains longest in the activating condition.
- 2-39. CLOCKED R-S FLIP-FLOP. This flip-flop is similar to the R-S flip-flop, but it has a clock pulse input (figure 2-15). The logic symbol can be recognized by the letter "C" at this input terminal. At the true-going transition of the clock pulse, the flip-flop becomes set if input A is true, or it becomes clear if input B is true (assuming no inverting dot at the clock pulse input terminal). If inputs A and B are both false during the clock pulse, the flip-flop does not change state. It is not permissible that A and B both be true when true-going clock pulse transition takes place.

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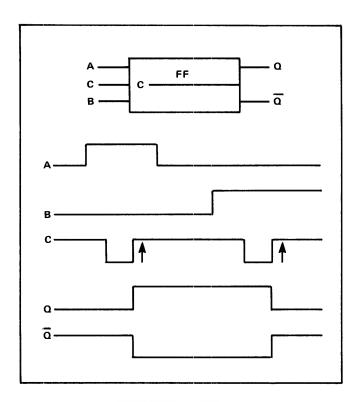


Figure 2-15. Clocked R-S Flip-Flop, Logic Symbol and Switching Waveforms

2-40. When the clocked R-S flip-flop has an inverting dot at the clock pulse input (figure 2-16), the false-going transition of the clock pulse is the transition that is effective in setting or clearing the flip-flop.

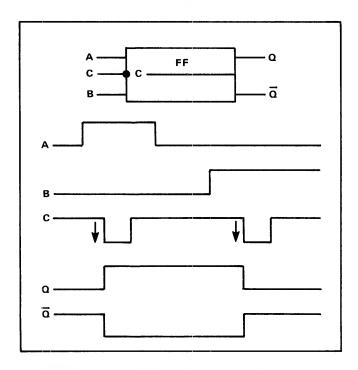


Figure 2-16. R-S Flip-Flop with Inverted Clock Input, Logic Symbol and Switching Waveforms

2-41. In some cases the clocked R-S flip-flop has a set and clear input at the top and bottom of the logic symbol (inputs D and E, figure 2-17). These inputs are independent of the clock pulse, and are referred to as the direct set and direct clear inputs. They function as a result of a true or false level, rather than a true or false-going transition. An inverting dot at the direct set or clear input indicates that a false level is required to set or clear the flip-flop. No dot indicates that a true level is required. The direct set and clear input is also used on other types of flip-flops.

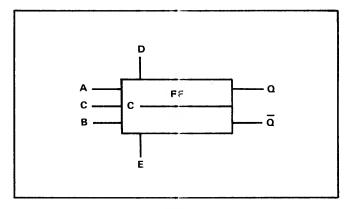


Figure 2-17. Logic Symbol for Clocked R-S Flip-Flop with Direct Set and Direct Clear Inputs

2-42. TOGGLE FLIP-FLOP. The symbol for the toggle flip-flop (figure 2-18) can be recognized by the letter "T" in the symbol. This flip-flop has a single input. If there is no inverting dot at this input, each time the input signal becomes true, outputs Q and \overline{Q} change state. Since two input pulses are required to produce one complete cycle of the output, the toggle flip-flop functions as a divide-by-two element, and is commonly used in groups in counting circuits, with the output of one flip-flop driving the next. Figure 2-18 shows the switching waveforms for one flip-flop.

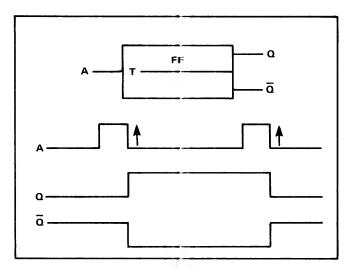


Figure 2-18. Toggle Flip-Flop, Logic Symbol and Switching Waveforms

2-43. If a toggle flip-flop symbol has an inverting dot at the input connection, the flip-flop changes state at the false-going transition of the input. The symbol and waveforms for this type of flip-flop are shown in figure 2-19.

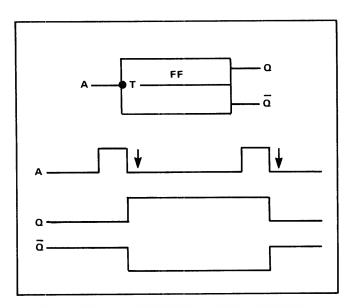


Figure 2-19. Toggle Flip-Flop with Inverted Input, Logic Symbol and Switching Waveforms

2-44. J-K FLIP-FLOP. In the J-K flip-flop, simultaneous true inputs for both set and clear will reverse the existing state of the flip-flop. This requires some method of storing two conditions, the previous output state and the new output state, until the clock pulse time. The set and clear inputs are labeled J and K respectively. In order to provide the necessary output storage the flip-flops are combined in a dual-rank configuration, together with the necessary gates to form a single logic element. For simplicity the internal dual-rank arrangement of the flip-flop is not usually shown (see figure 2-20).

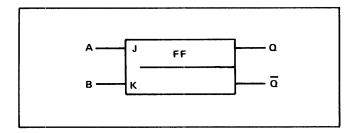


Figure 2-20. J-K Flip-Flop, Logic Symbol

2-45. CLOCKED J-K FLIP-FLOP. The clocked J-K flip-flop (figure 2-21) is similar to the clocked R-S flip-flop. However, simultaneous set and clear inputs to the J-K flip-flop are permissible. Under these conditions, the J-K flip-flop changes its state at the occurrence of each true-going clock pulse transition. With an inverting dot at the clock pulse input, the flip-flop changes state at the false-going clock pulse transition. If both J and K inputs are true when the clock pulse occurs, the flip-flop will toggle.

2-46. The J-K flip-flop can also be operated with one true input and one false input. It then functions in the same manner as the clocked R-S flip-flop.

2-47. Figure 2-21 includes a state table showing operation of the J-K flip-flop. Note that with both inputs true at the time of clock pulse transition, the final state of the flip-flop (after clock pulse transition) depends on the state before the transition. With only one input true, the initial state of the flip-flop is immaterial.

2-48. In some cases the J-K flip-flop consists of two separate flip-flops, with the output of one applied to the input of the other. Usually, a single flip-flop logic symbol is used to illustrate this circuit. The clock pulse inverting dot, or the lack of it, indicates the clock pulse transition that affects the output flip-flop of the pair.

2-49. LATCHING FLIP-FLOP. The latching flip-flop (figure 2-22) can be recognized by the letter "L" in the symbol. The flip-flop has a clock input and a data input. Although the logic symbol shows two input-signal connections to the flip-flop, these separate inside the integrated circuit container from a single input to the unit. After separation, one input is inverted (indicated by the inverting dot) before application to the flip-flop proper.

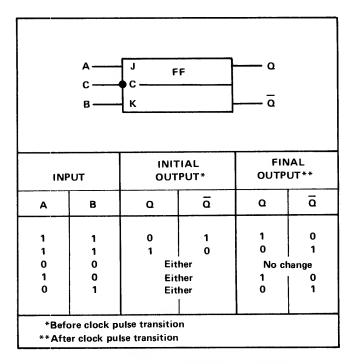


Figure 2-21. Clocked J-K Flip-Flop, Logic Symbol and State Table

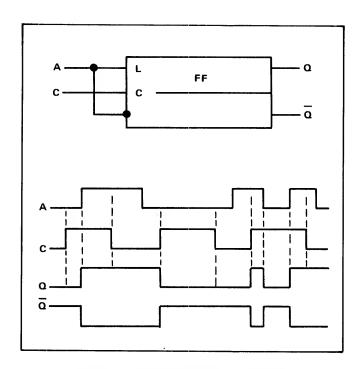


Figure 2-22. Latching Flip-Flop, Logic Symbol and Switching Waveforms

2-50. The set input is responsive to true signal levels at A (figure 2-22), and the clear input is responsive to false signal levels at A. If there is no inverting dot at the clock input, this response takes place when the clock pulse is true. While the clock pulse remains true, the outputs follow any changes in the logic level at A as these changes take place. When the clock pulse becomes false, the flip-flop retains its current state, and no longer responds to changes in the input signal.

2-51. If the clock input connection of a latching flipflop has an inverting dot, the flip-flop responds to the input signal while the clock pulse is false.

2-52. DELAY FLIP-FLOP. The delay flip-flop (figure 2-23) is identified by a letter "D" inside the flip-flop symbol. This type of flip-flop is similar to the latching flip-flop, except that it responds to the input signal only at the transition of the clock pulse. The delay flip-flop thus does not follow changes in the input signal as these changes take place.

2-53. GATE FLIP-FLOP. The gate flip-flop is made up of two logic gates, connected as shown in figure 2-24. The number of inputs to each gate can vary from that shown. The flip-flop can also be made up of two "nor" gates. The circuit may have a set output, a clear output, or both.

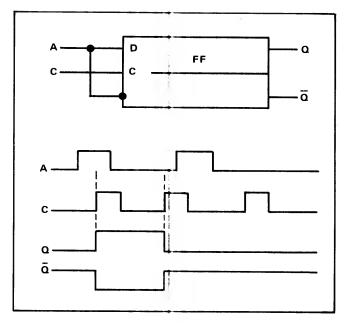


Figure 2-23. Delay Flip-Flop, Logic Symbol and Switching Waveforms

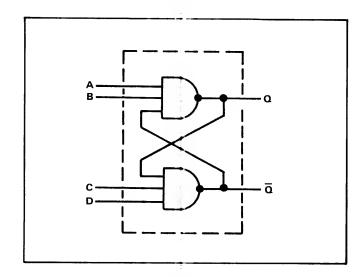


Figure 2-24. "Nand" Gate Flip-Flop, Logic Symbol

2-54. The gate flip-flop functions like an R-S flip-flop, but it has the advantage that it can "or" inputs without the addition of a separate "or" gate. Another reason for use of the gate flip-flop is that if two spare gates are available in integrated circuits on a circuit card, they can be employed as an R-S flip-flop without the need to add another integrated circuit to the card.

2-55. If the flip-flop is made up of two "nand" gates, as in figure 2-24, it is set by a false input at either A or B. Similarly, it is cleared by a false input at C or D. When the flip-flop is in the quiescent state (not undergoing transition), the inputs at A, B, C, and D are all true.

2-56. A "nor" gate flip-flop is illustrated in figure 2-25. In this type of flip-flop all inputs are false when the device is in the quiescent state. A true input at A sets the flip-flop, and a true input at B clears it. The outputs cross in the illustration in order to align the set and clear inputs with the set and clear outputs, respectively.

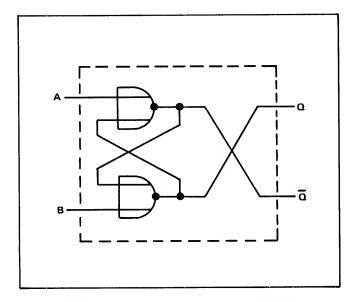


Figure 2-25. "Nor" Gate Flip-Flop, Logic Symbol

2-57. In most circuits using the "nand" or "nor" gate flip-flop, input signals are such that the flip-flop does not receive a set and clear input signal simultaneously. If circuit design does permit this to occur, both the set and the clear output are true for the duration of the condition. The eventual state of the flip-flop is determined by the input that remains longest in the activating condition.

2-58. SCHMITT TRIGGER CIRCUIT.

2-59. The Schmitt trigger circuit (figure 2-26) can be identified by the letters "ST" appearing in the logic-diagram symbol. Like the various types of flip-flop, this circuit is a two-state device which does not perform a Boolean function. It serves for level sensing or signal squaring. It may have a set output, a clear output, or both.

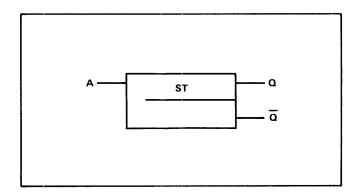


Figure 2-26. Schmitt Trigger Circuit, Logic Symbol

2-60. When the input voltage at A is below a certain level, the Schmitt trigger is in the clear state. When the input voltage rises above the reference level, the trigger assumes the set state. Circuit constants establish the reference level.

2-61. Switching between states takes place rapidly, and the Schmitt trigger is therefore useful for squaring signals that have poor rise and fall times. It can produce a square wave from a sine wave. Other uses of the Schmitt trigger are voltage level restoration, and detection of the rise of the input signal above a given level.

2-62. ONE-SHOT MULTIVIBRATOR.

2-63. The one-shot multivibrator (figure 2-27) is a monostable switching element, used to produce a pulse of predetermined duration. The device is triggered into its unstable state by an external signal. It returns to the stable state after a time interval determined by circuit constants.

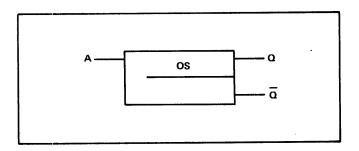


Figure 2-27. One-Shot Multivibrator, Logic Symbol

2-64. If there is no inverting dot at the input, triggering is accomplished when input A undergoes a true-going transition. If there is an inverting dot, a false-going transition is required.

2-65. The one-shot multivibrator may have a set output, a clear output, or both.

2-66. The symbol for the one-shot multivibrator is always drawn with the orientation shown in figure 2-27, with the input at the left and the output or outputs at the right.

2-67. FREE-RUNNING MULTIVIBRATOR.

2-68. The free-running multivibrator (figure 2-28) can be distinguished by the letters "MV" appearing in the symbol. This device produces trains of complementary pulses at Q and \overline{Q} . Pulse width is determined by circuit constants.

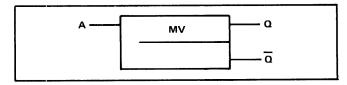


Figure 2-28. Free-Running Multivibrator, Logic Symbol

2-69. In some instances a control signal is applied to the free-running multivibrator. If there is no inverting dot at the signal input to the symbol, the multivibrator runs when the control signal is true, and stops when the signal is false. When it is stopped, the multivibrator is in the clear condition. If there is an inverting dot at the control signal input, a false input is required to bring the multivibrator into operation. This type of multivibrator is in the set condition when it is not running.

2-70. Figure 2-29 shows typical waveforms for a controlled free-running multivibrator that runs when the control signal is true. The true and false portions of the output waveforms need not be of equal duration.

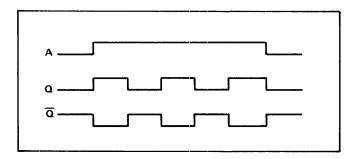


Figure 2-29. Input and Output Waveforms of Controlled Free-Running Multivibrator

2-71. The symbol for the free-running multivibrator is always drawn with the orientation shown in figure 2-28, with the input (if any) at the left, and the output or outputs at the right.

2-72. AMPLIFIER.

2-73. The symbol for an amplifier is shown in figure 2-30. A differential amplifier is illustrated in figure 2-31. Like gates, these symbols may be shown in any of four positions.

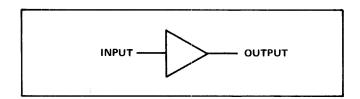


Figure 2-30. Amplifier, Logic Symbol

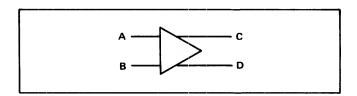


Figure 2-31. Differential Amplifier, Logic Symbol

- 2-74. In most instances, the amplifier symbol has a nonbinary input. A circuit which restores the voltage level of a binary input, or which furnishes a low-impedance output from a binary input, is indicated by a one-input gate symbol.
- 2-75. An inverting dot at the output of an amplifier symbol indicates that the amplifier inverts the input signal.
- 2-76. Figure 2-32 is the symbol for a phase splitter.

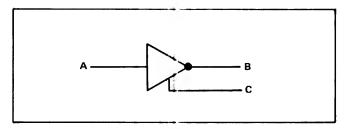


Figure 2-32. Phase Splitter, Logic Symbol

2-77. CAPACITIVE COUPLING.

2-78. Capacitive coupling to a logic element is indicated by an arrow, as shown in figure 2-33. When used with a gate or multivibrator, this type of coupling results in response only to a change in the logic level. Since the clock pulse input to multivibrators always uses capacitive coupling, the arrow is omitted from this type of input.

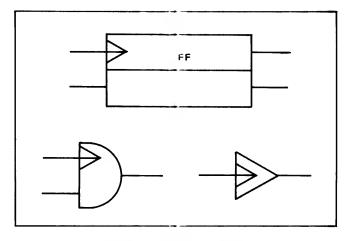


Figure 2-33. Capacitive Coupling

2-79. MULTIPURPOSE LOGIC SYMBOL.

2-80. The "multipurpose" logic symbol is used to indicate a logic function that has not received a standardized logic symbol. The multipurpose symbol is also used to depict multiple logic elements that act together to perform a single/overall logic function such as decoding, data storage, or counting. The symbol shown in figure 2-34 may be of varying proportions (most commonly 2:1 or 1:2), but

retangular in shape. The symbol should include a descriptive name indicating the overall logic function performed. All active inputs should be labeled to indicate the effect on the overall function. Other descriptive information may be included as needed.

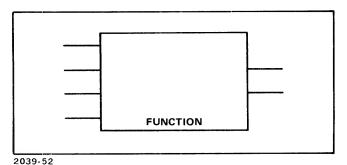


Figure 2-34. Multipurpose Logic Symbol

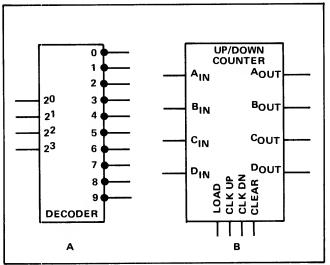
2-81. Examples of nonstandard symbols are given in figure 2-35. Figure 2-35a shows a binary to octal decoder. Figure 2-35b shows a 4-bit up/down counter.

2-82. INTEGRATED CIRCUIT CHARACTERISTICS AND DIAGRAMS.

2-83. Contained in table 2-1 is a list of integrated circuit operating characteristics. This list of characteristics is keyed to the integrated circuit diagrams illustrated in figure 2-36. The circuit diagrams are shown in numerical order by Hewlett-Packard part number. Each circuit diagram has a characteristic number which identifies a particular operating characteristic in table 2-1.

2-84. Refer to any accompanying text, notes, or characteristic information concerning the operation of non-standard logic elements.

2-85. For additional information on the operation of selected nonstandard integrated circuits refer to figure 2-37. The integrated circuits are in numerical order by Hewlett-Packard part number. The typical schematic representation of each circuit is followed by a brief description of circuit operation.



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Figure 2-35. Nonstandard Logic Symbols

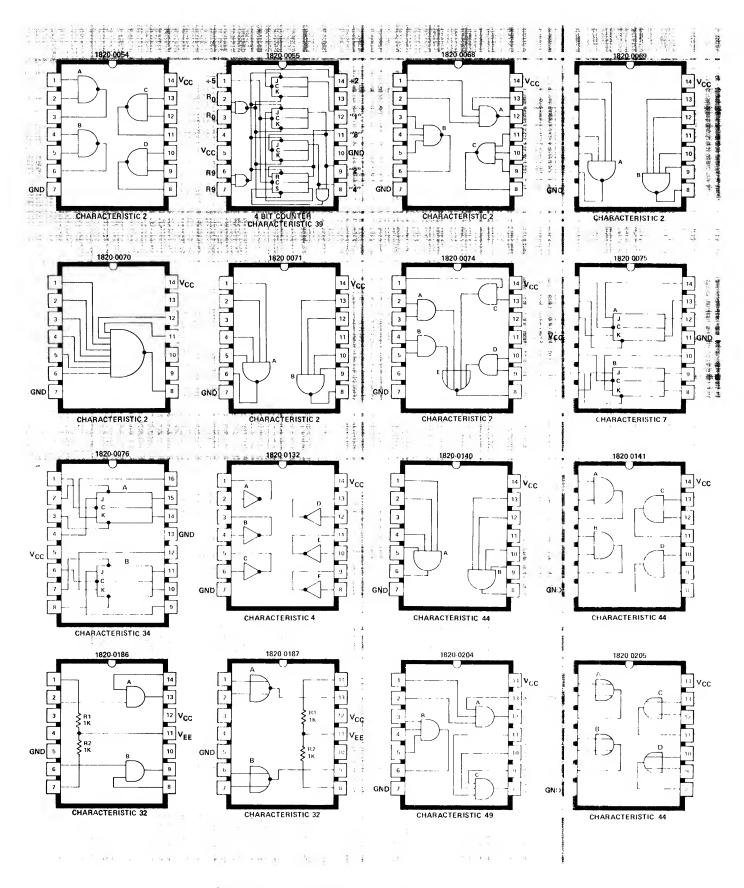


Figure 2-36. Integrated Circuit Diagrams (Sheet 1 of 7)

Section II

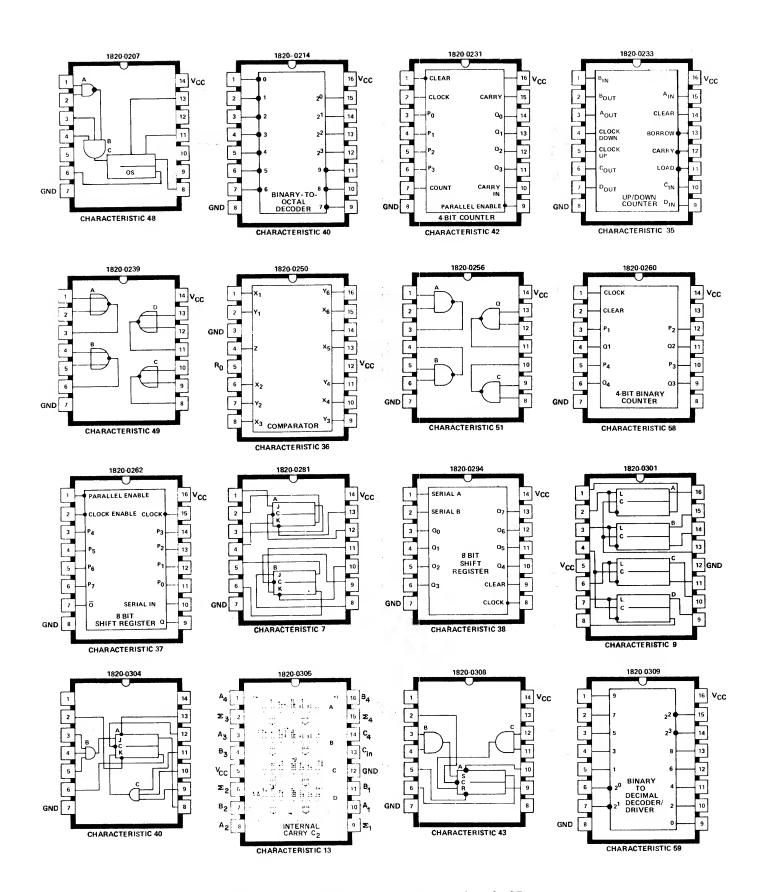


Figure 2-36. Integrated Circuit Diagrams (Sheet 2 of 7)

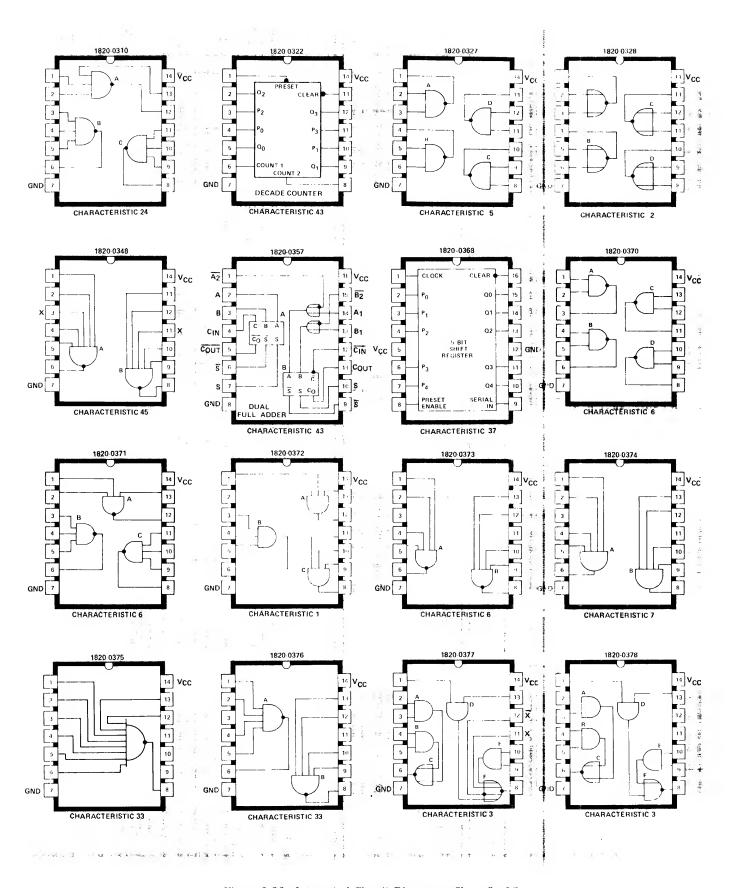


Figure 2-36. Integrated Circuit Diagrams (Sheet 3 of 7)

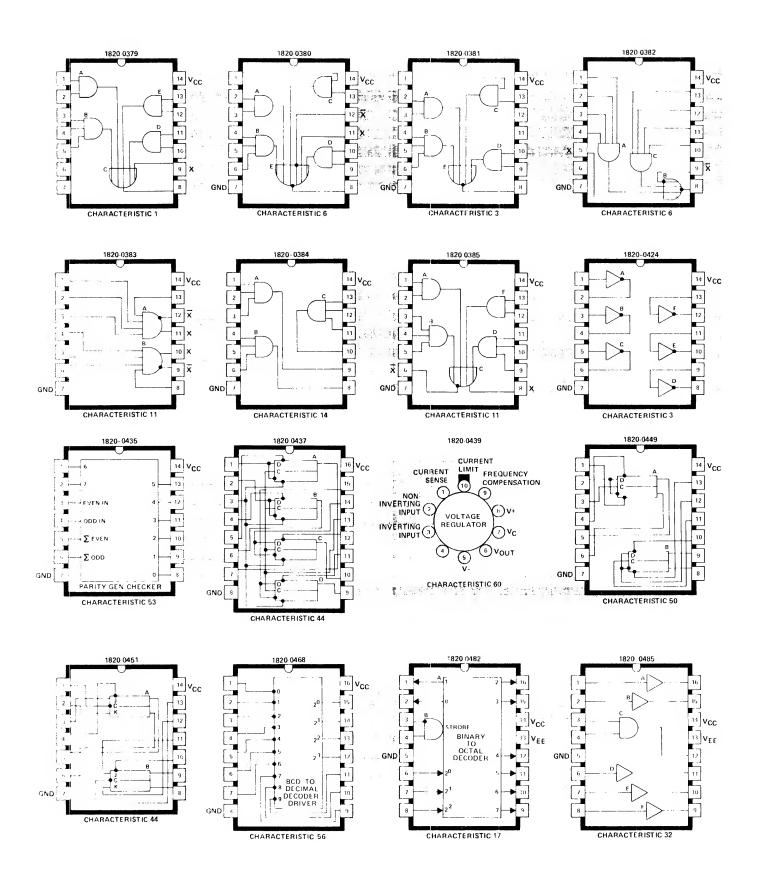


Figure 2-36. Integrated Circuit Diagrams (Sheet 4 of 7)

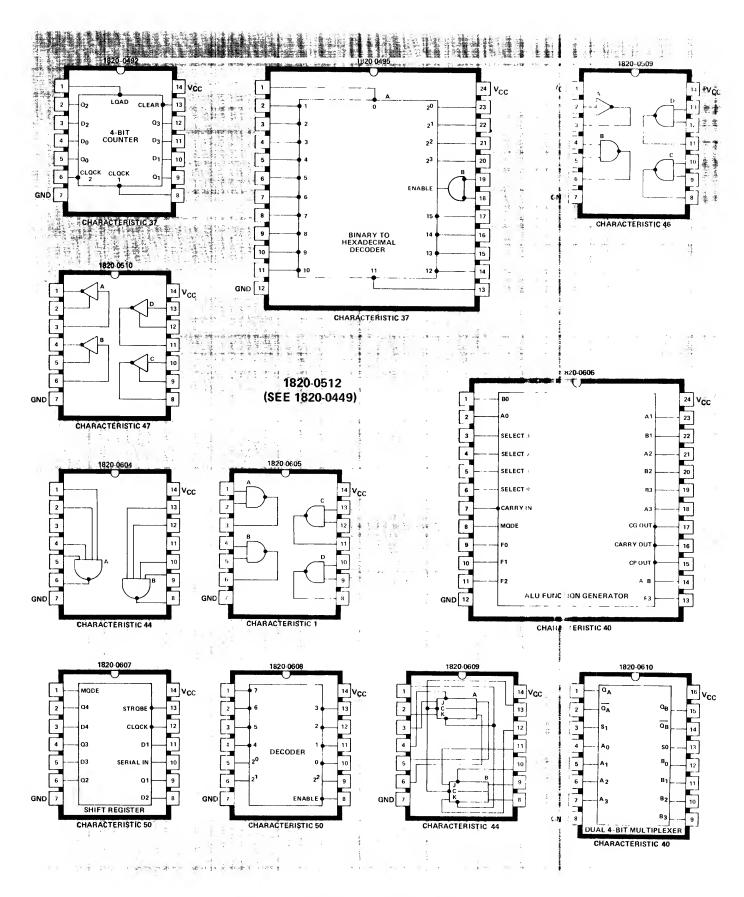


Figure 2-36. Integrated Circuit Diagrams (Sheet 5 of 7)

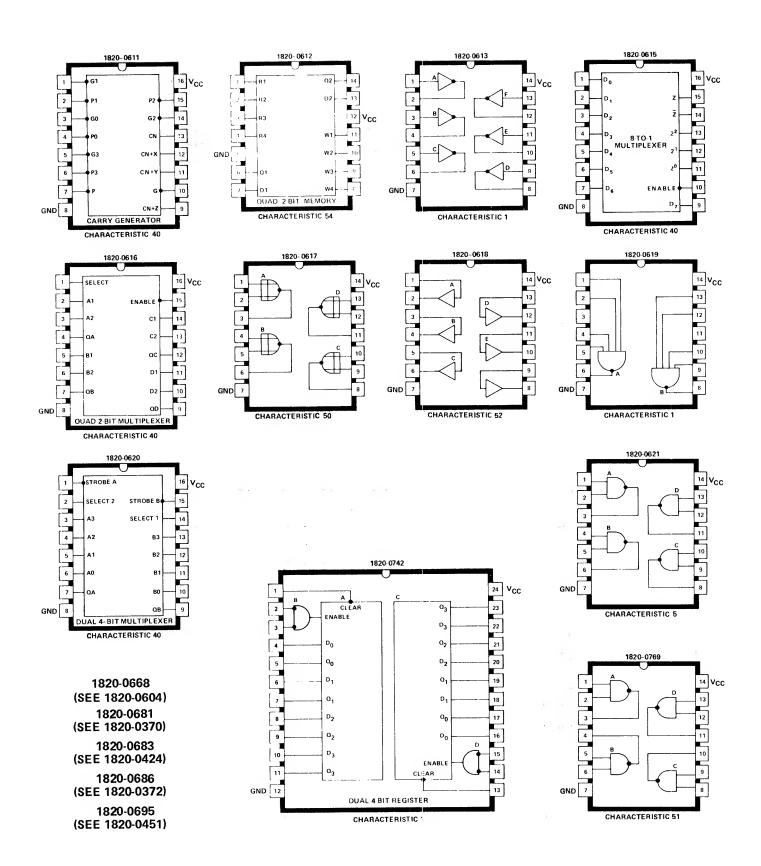


Figure 2-36. Integrated Circuit Diagrams (Sheet 6 of 7)

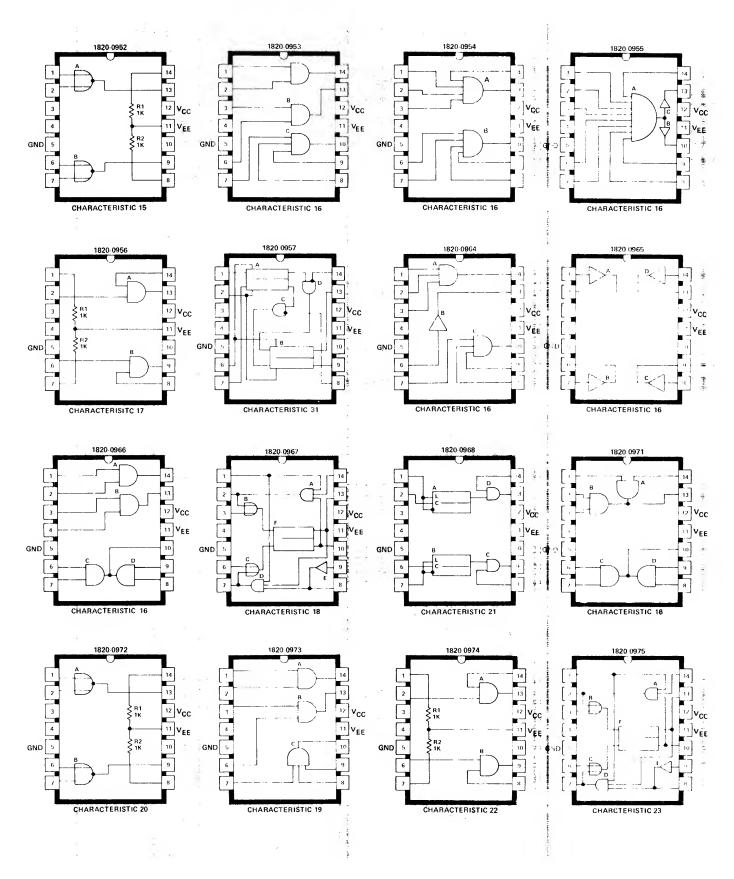


Figure 2-36. Integrated Circuit Diagrams (Sheet 7 of 7)

Table 2-1. Integrated Circuit Characteristics

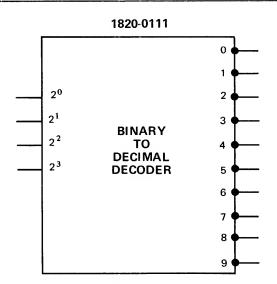
OUADA OTE DIGITIO	INPUT L	EVEL	ОИТРИТ	LEVEL	OPEN	PROPA	IMUM GATION LAY
CHARACTERISTIC	LOGIC 1 (VOLTS, MIN)	LOGIC 0 (VOLTS, MAX)	LOGIC 1 (VOLTS, MIN)	LOGIC 0 (VOLTS, MAX)	INPUT ACTS AS:	TO LOGIC 1 (NANOSECONDS)	TO LOGIC 0 (NANOSECONDS)
1	2.0	0.8	2.4	0.4	Logic 1	15	15
2	2.0	0.8	2.4	0.4	Logic 1	29	15
3	2.0	0.8	2.4	0.4	Logic 1	12	10
4	1.9	0.8	2.4	0.45	Logic 1	15	13
5	2.0	0.8	(12)	0.4	Logic 1	45	15
6	2.0	0.8	2.4	0.4	Logic 1	10	10
7	2.0	0.8	2.4	0.4	Logic 1	50 ⁽²⁾	50
8	2.0 ⁽³⁾	0.8	2.4	0.4	Logic 1	35	50
9	2.0 ⁽⁴⁾	0.8	2.4	0.4	Logic 1	40	25
10	2.0	0.8	Output ON res	l ults in a max 0.4	Logic 1	34 ⁽¹⁾	20 ⁽¹⁾
11	2.0	0.8	across X & X		Logic 1	17 ⁽¹⁾	13 ⁽¹⁾
12	2.0	0.8	2.4 ⁽⁵⁾	0.4	Logic 1	35	30
13	2.0 ⁽⁶⁾	0.8	2.4	0.4	Logic 1	55	60
14	2.0	0.8	1.0	0.0	Logic 1	19 ⁽¹⁾	19 ⁽¹⁾
15	1.25	0.5	2.35	-0.36	Logic 0	14	12
16	1.8	0.0	1.5	0.22	Logic 0	4.5	4
17	1.25	0.5	2.25	-0.36	Logic 0	18	18
18	1.35 ⁽⁶⁾	0.5	2.35	-0.36	Logic 0	15 J&K only	25 J&K only
19	1.8	0.0	1.5	0.22	Logic 0	5.5	6
20	1.5	0.4	2.25	-0.3	Logic 0	24	12
21	1.8	0.0	2	-0.16	Logic 0	25	4
22	1.5	0.4	2.2	-0.3	Logic 0	24	24
23	1.5 ⁽³⁾	0.4	2,2	-0.3	Logic 0	30	25
24		0.9	2.6	0.5	Logic 1	80	30
25	Input voltage =	= +35.0 max	Output voltag	e - +25.0 max	Output co	ırrent - 20.0 ma max	, 30 ma min
26	Voltage gain:	32 db typical					
27	Voltage gain:			1		•	1
28	2.0	0.9	2.6	0.5	Logic 1	80	40
29	2.0 ⁽¹³⁾	0.8(14)	2.4	0.4	Logic 1	135	135
30	2.0	0.8	2.4	0.4	Logic 1	10	10
31	1.25	0.5	2.5	2.2	Logic 0	15	30
32	1.25	0.5	2.35	-0.36	Logic 0	8	8
33	2.0	0.8	2.4	0.4	Logic 1	11	11
34	2.0 ⁽⁷⁾	0.8	2.4	0.4	Logic 1	30	45
35	2.0	0.8	2.4	0.4	Logic 1	(8)	(9)
36	2.0	0.8	4.7	0.5	Logic 1	_	_
37	2.0	0.8	2.4	0.4	Logic 1	30	35

2100A

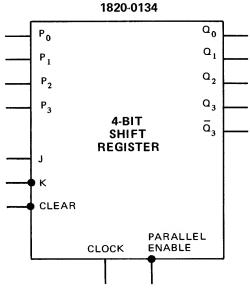
Table 2-1. Integrated Circuit Characteristics (Continued)

CHARACTERISTIC	INPUT	LEVEL	OUTPUT	r LEVEL	OPEN INPUT	PROPA	IMUM GATION LAY
CHARACTERISTIC	LOGIC 1 (VOLTS, MIN)	LOGIC 0 (VOLTS, MAX)	LOGIC 1 (VOLTS, MIN)	LOGIC 0 (VOLTS, MAX)	ACTS AS:	TO LOGIC 1 (NANDSECONDS)	TO LOGIC 0 (NANOSECONDS)
38	2.0 ⁽¹¹⁾	8.0	2,4	0.4	Logic 1	40	(10)
39	2 .0⁽¹⁵⁾	0.8	2.4	0,4	_	100	100
40	2.0	0,8	2.4	0.4		21	27
41	1.7	0.9	2.4	0.4	_	-	_
42	1.4	0.8	2.4	0.4		14	14
43	1 . 8	0,8	2.4	0.4	Logic 1	45	40
44	1.8	1.1	2.5	0.4	Logic 1	15	15
45	2.0	1.1	(12)	0.5	Logic 1	50	35
46	1.9	0.8	6.0	-6.0	1	50	25
47	3.0	-3.0	2 . 6	0.45	-	90	80
48	1.9	0,85	2.4	0.45	1	40	
49	1.8	1.1	2,5	0.4	1	10	10
50	1.8	1.1	2 . 5	0.4	1	25	25
51	1.8	1.1	(12)	0.45	1	50	35
52	2.0	0,8	(12)	0.7		25	15
53	2.0	0,8	2,5	0.4	1	60	68
54	1.25	0.8	2,35	-0.36	_	45 WRITE	25 READ
55	2.0	0.8	Capable o	of sinking cathode	current to 5	oma at up to 60 volts	•
56			Not used	at this time.		•	
57	2,0	0 . 8	2.6	0.5	_	35	45
58	1.8	0.5	2,5	0,5	_	5	5
59	1.0	0.4	Capable o	f sinking cathode	current to 1	I Oma at up to 50 vol	ts.
60	Input v ± 40	oltage = max.	Output v 37 volt			Qutput curren	t = 150ma max.

- Notes: (1) Through expanded gate.
 - (2) Required clock pulse width 20 ns min.; set-clear 25 ns min.
 - (3) Required pulse widths 30 ns min.
 - (4) Required pulse widths; clock 30 ns min., data 75 ns min.
 - (5) BCS0-BCS9 only one output = 0. BCD 9 all outputs = 1.
 - (6) Required pulse widths 16 ns min.
 - (7) Required clock pulse widths 20 ns min.
 - (8) Delay is 27 ns at output and 22 ns at carry/borrow.
 - (9) Delay is 37 ns at output and 18 ns at carry/borrow.
 - (10) Delay is 40 ns clock to output and 50 ns clear to output.
 - Required clock and clear pulse width is typically 25 ns and 30 ns, respectively (45 ns max.). Time serial A and B data must be set up prior to clock pulse, typically 15 ns (30 ns max.).
 - (12) Level depends on load.
 - (13) +2.2V for pin 1.
 - (14) +0.6V for pin 1.
 - (15) Required input pulse width 50 ns min.

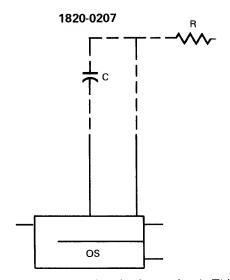


Data on the input lines is interpreted as a binary number. The output line representing the decimal equivalent of the binary input will go low and remain low until the input data is changed. Input data for decimal numbers greater than 9 result in all outputs being high.

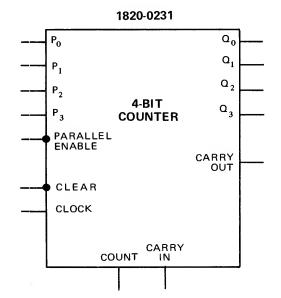


Serial data is entered on the J and K lines. One bit is entered for each clock pulse, most significant bit first. After the clock pulse the data bit will appear at the Ω_0 output.

Parallel data is entered by placing the data on the P_0 -- P_3 input lines and applying a negative PARALLEL ENABLE pulse. A negative CLEAR pulse will clear the register.



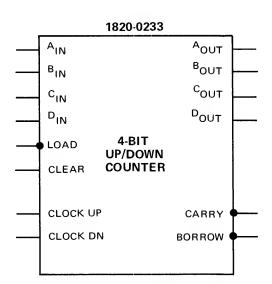
The one-shot is triggered by the input signal. This produces a pulse with duration determined by the external RC elements.



The counter is set from the parallel input lines. When the clock input line goes high and a negative input is applied to the PARALLEL ENABLE line, the counter is loaded. When the clock goes high and both the COUNT and CARRY IN lines go high, the counter will be incremented. The new count will be present on the output lines following the high-to-low transition of the clock.

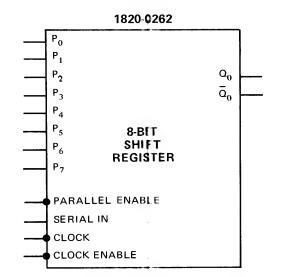
The CARRY OUT line will be high if the CARRY IN line is high and the counter lines are all high.

Figure 2-37. Nonstandard Integrated Circuit Descriptions (Sheet 1 of 7)

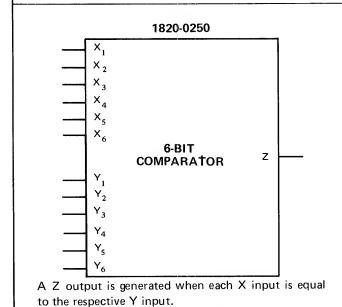


A negative pulse at the LOAD input will set the counter with the data on the input lines. A positive pulse on the CLEAR line will clear the counter. The counter is decremented for each positive-going pulse on the CLOCK DOWN line and incremented for each positive-going pulse on the CLOCK UP line.

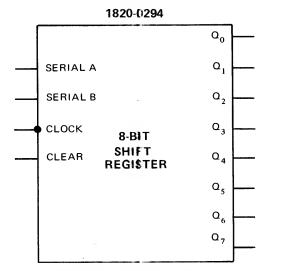
A negative pulse occurs on the CARRY line when the outputs of the counter are all high and a negative pulse on the CLOCK UP line occurs. A negative pulse on the BORROW line occurs when the counter outputs are all low and a negative pulse on the CLOCK DOWN line occurs. When a BORROW pulse is generated the counter is set to all "ones".



A negative pulse on the PARALLEL ENABLE line will load the register with the data on the parallel input lines. A low CLOCK ENABLE line allows negative clock pulses to store serial data, one bit at a time. Each time a clock pulse occurs the data in the register is shifted one bit position.

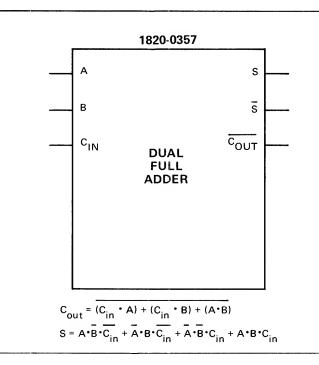


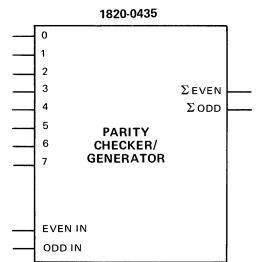
 $Z = (\overline{X_1 \oplus Y_1}) \cdot (\overline{X_2 \oplus Y_2}) \cdot (\overline{X_3 \oplus Y_3}) \cdot (\overline{X_4 \oplus Y_4}) \cdot (\overline{X_5 \oplus Y_5}) \cdot (\overline{X_6 \oplus Y_6})$



A negative clock pulse loads data at the A or B input lines, most significant bit first. The CLEAR line clears the register.

Figure 2-37. Nonstandard Integrated Circuit Descriptions (Sheet 2 of 7)



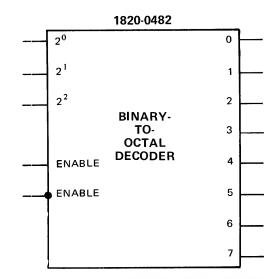


0 THRU 7	EVEN IN	ODD IN	Σ EVEN	Σ ODD			
EVEN	1	0	1	0			
ODD	1	0	0	1			
EVEN	0	1	0	1			
ODD	0	1	1	0			
_	1	1	0	0			
_	0	0	1	1			

The eight data lines are tested to determine whether the true bits are even or odd. The EVEN and ODD inputs are interpreted as parity from another parity checker. (Note: the EVEN and ODD lines may also be interpreted as the expected parity.) The SUM

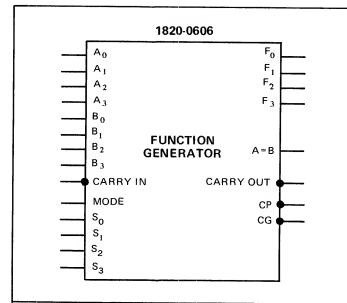
1820-0435 PARITY CHECKER/GENERATOR (Continued)

EVEN and SUM ODD outputs are the combined parity of the two sets of data, refer to the table above. If the parity check mode is used the output of the SUM ODD line will indicate a parity error.



Binary input data is decoded to octal when both ENABLE conditions are met. For a given input only one output line will be high.

Figure 2-37. Nonstandard Integrated Circuit Descriptions (Sheet 3 of 7)



FUNCTION SELECT		OUTPUT FUNCTION			
S3	S2	S1	S0	LOGIC FUNCTIONS	ARITHMETIC OPERATIONS
				F = A F = A+B F = AB F = Logical 0 F = AB F = B F = A \text{ B} F = A+B F = A \text{ B} F = B F = AB F = AB F = AB F = AB F = AB F = A+B F = A+B F = A+B F = A+B F = A+B F = A+B	F = A F = A+B F = A+B F = minus 1 (2's complement) F = A plus AB F = [A+B] plus AB F = A minus B minus 1 F = AB minus 1 F = A plus AB F = A plus B F = [A+B] plus AB F = AB minus 1 F = AB minus 1 F = AB minus 1 F = A plus AB F = AB minus 1 F = A plus A 1 F = [A+B] plus A

The MODE line determines whether an arithmetic or logic operation will be performed (A "1" for logic function and a "0" for arithmetic function). The S lines select the function to be performed according to the table given above. If the function code LHHL is used and the A inputs are the same as the B inputs the A=B output line will be true.

The CP (Carry Propagate) and CG (Carry Generate) lines are used for fast addition operations using a "look ahead" carry function. The CP line will go false when the following conditions are met:

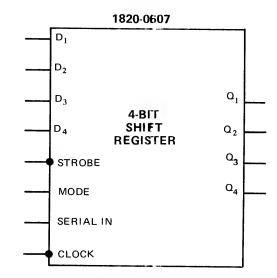
$$CP = F_0 \cdot F_1 \cdot F_2 \cdot F_3$$

If the CARRY IN line is false and the CP condition is met, then the CARRY OUT line will also go false.

1820-0606 FUNCTION GENERATOR (Continued)

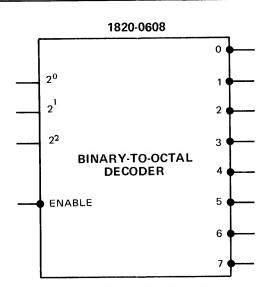
The CG line will go false if the pack addition results in a true CARRY OUT independent of the CARRY IN. The CT signal is defined as follows:

$$CG = A_3 \cdot B_3 + (A_2 \cdot B_2)(A_3 + B_2) + (A_1 \cdot B_1)(A_2 + B_2)(A_3 + B_3)$$
$$+ (A_0 \cdot B_0)(A_1 + B_1)(A_2 + B_2)(A_3 + B_3)$$

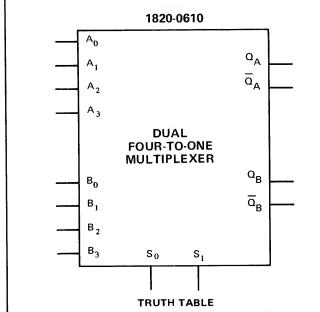


Data may be entered in serial or parallel. To enter serial data the MODE line must be low. Data is placed on the SERIAL Input line and a clock pulse is then used to enter the data. Parallel data entry is accomplished with the MODE line high and the data on the D input lines. The data is then entered by a STROBE pulse. Serial right shifting is accomplished by lowering the MODE line and pulsing the CLOCK line.

Figure 2-37. Nonstandard Integrated Circuit Descriptions (Sheet 4 of 7)



Binary data is decoded to octal when the ENABLE input is low. For a given input only one output line will be low.



SELECT LINES		INPUTS				OUTPUTS	
S ₀	S ₁	A ₀	A	A ₂	A ₃	Q _A	ā _A
0	0	0	х	х	х	0	1
0	0	1	Х	X	X	1	0
1	0	×	0	X	Х	0	1
1	0	×	1	x	X	1	0
0	1	×	×	0	×	0	1
0	1	×	×	1	×	1	0
1	1	×	Х	Х	0	0	1
1	1	×	×	X	1	1	0

Figure 2-37. Nonstandard Integrated Circuit Descriptions (Sheet 5 of 7)

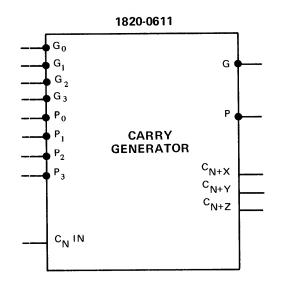
1820-0610 DUAL FOUR-TO-ONE MULTIPLEXER (Continued)

LOGIC EQUATIONS

$$Q_{A} = A_{0} \cdot \bar{S}_{0} \cdot \bar{S}_{1} + A_{1} \cdot S_{0} \cdot \bar{S}_{1} + A_{2} \cdot \bar{S}_{0} \cdot S_{1} + A_{3} \cdot S_{0} \cdot S_{1}$$

$$Q_{B} = B_{0} \cdot \bar{S}_{0} \cdot \bar{S}_{1} + B_{1} \cdot S_{0} \cdot \bar{S}_{1} + B_{2} \cdot \bar{S}_{0} \cdot S_{1} + B_{3} \cdot S_{0} \cdot S_{1}$$

A two bit code selects one out of four bits to be propagated through the multiplexer. The dual output allows both states of the output bit to be used. A truth table of input codes and the resulting bit transfer is given above.

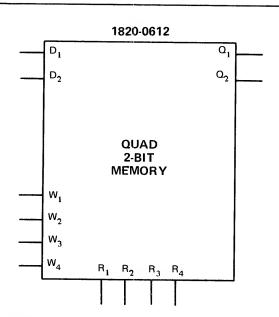


This circuit is used together with 1820-0606 to provide fast addition. The Carry Generator uses CP (Carry Propagate) and CG (Carry Generate) signals from the adder circuits (P_0 - P_3 and G_0 - G_3) as well as the Carry In signal to the first adder circuit to provide carry in signals to succeeding adder circuits. (C_{N+X} , C_{N+Y} , and C_{N+Z}). This is done without waiting for the "ripple carry" to propagate from adder to adder.

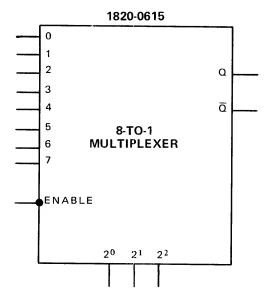
The G and P signals provide inputs to additional look ahead circuits if they are used. The output signals are defined as follows:

$$\begin{split} & C_{N+X} &= G_0 + P_0 C_N \\ & C_{N+Y} &= G_1 + P_1 G_0 + P_1 P_0 C_N \\ & C_{N+Z} &= G_2 + P_2 G_1 + P_2 P_1 G_0 + P_2 P_1 P_0 C_N \\ & \overline{G} &= \overline{G_3 + P_3 G_2 + P_3 P_2 G_1 + P_3 P_2 P_1 G_0} \\ & P &= \overline{P_3 P_2 P_1 P_0} \end{split}$$

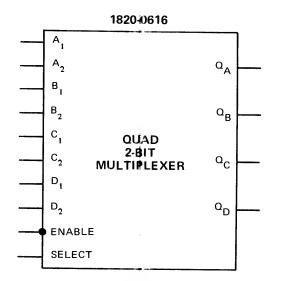
X = irrelevant



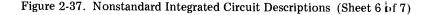
Data is written into the memory by placing the data on the D inputs and pulsing the appropriate W (Write) line. Data is read from the memory by pulsing the desired R (Read) line. The data will then be placed on the Ω output lines for the duration of the read signal.

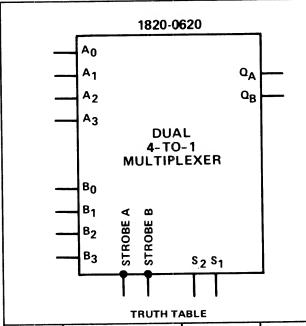


Data on one of the 8 input lines is transferred to the output line when the ENABLE line goes false. The specific input line to be transferred is determined by the three select lines.



The circuit is used to select one of two four bit data words. The ENABLE must be low to allow the selection. The SELECT line is used to determine which data word will be transmitted. A "0" on the select line will transmit data word 1. A "1" on the select line will transmit data word 2.

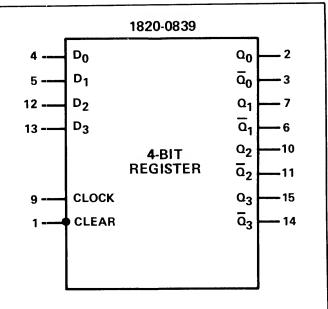




	SEL	ECT UTS	DA	ATA	INPU	TS	STROBE	OUTPUT
	s ₂	S ₁	A0	A1	A2	А3	Α	QA
	×	×	×	Х	×	×	1	0
I	0	0	0	Х	х	х	0	0
	0	0	1	x	Х	x	0	1
	0	1	×	0	x	X	0	0
	0	1	×	1	х	Х	0	1
	1	0	×	х	0	×	0	0
	1	0	×	х	1	×	0	1
	1	1	×	X	×	0	0	0
	1	1	×	х	X	1	0	1
	l	!			1			

Select inputs S_1 and S_2 are common to both sections. X = irrelevant

Each part of the multiplexer allows one of four bits to be placed at the output terminal. The data bits are placed on the input lines prior to the multiplexing operation. The code for the desired bit is then placed on the select lines (refer to the table above). The strobe line is used to gate the data bit onto the appropriate output line (A inputs to the Ω_{A} terminal etc.).



Data on the input lines (D_0 - D_3) is stored at the low-to-high transition of CLOCK line. A low signal on the CLEAR line will clear the register.

Figure 2-37. Nonstandard Integrated Circuit Descriptions (Sheet 7 of 7)

WIRING INFORMATION I



3-1. INTRODUCTION.

3-2. This section contains interconnecting wiring information for the computer. Replace wiring as described in the Installation and Maintenance Manual. Replace leadwires with the same color and size as on the original installation.

3-3. BACKPLANE WIRING.

- 3-4. Table 3-1 is a functional wiring list for the backplane and includes all connections between the backplane connectors, the front panel (A24), and the power supply (A25). The table is in numerical order of reference numbers which are assigned to the signal mnemonics. The reference numbers and signal mnemonics also appear in the signal index (table 4-1) and on the schematic diagrams in section IV. Refer to paragraph 4-21 for an explanation of how to use these reference numbers.
- 3-5. Table 3-2 lists the point-to-point wiring between the backplane connectors and front panel connector XA24. The list is in numerical order of connector XA24 pin numbers.
- 3-6. Table 3-3 lists the point-to-point wiring between the backplane connectors and the power supply and plenum chamber. The list is in alphanumeric order of reference designations. Each connection is listed twice to enable determining leadwire terminations from either end of the leadwire. For example, the wht-blk-red leadwire from A25TB1-1 to XA101-9,10 is also listed as from XA101-9,10 to A25TB1-1.
- 3-7. Figure 3-1 depicts the wiring between the backplane, the front panel (A24), the power supply (A25), the plenum chamber (A26), and other components. The diagram is not complete in itself but must be used with

tables 3-1, 3-2, and 3-3 to determine the point-to-point wiring between the components illustrated.

3-8. POWER SUPPLY WIRING.

3-9. This section contains information about the wiring that interconnects the computer and the power supply. For information concerning wiring that is internal to the power supply, refer to the separate power supply manual.

3-10. PLENUM CHAMBER WIRING.

- 3-11. Table 3-4 lists the point-to-point wiring between the assemblies and components in the plenum chamber. The table also includes the wiring between the plenum chamber and the backplane, power switch, and power supply. The list is in alphanumeric order of reference designations. Each connection, except to the backplane, power switch, and power supply, is listed twice to enable determining leadwire terminations from either end of the leadwire. For example, the blk leadwire from B1-J1 to TB2-1 is also listed as from TE2-1 to B1-J1.
- 3-12. The wiring diagram, figure 3-2, supports table 3-4 by identifying the plenum chamber assemblies and components and their connecting points.

3-13. CABLE ASSEMBLY WIRING.

3-14. The cable assemblies used to interconnect the 50-pin connector edges of the cards in the memory section (see figure 4-2) are wired pin-to-pin by 50-wire flat cables. The connector assemblies used to interconnect the 48-pin connector edges of the cards in the memory section are also wired pin-to-pin.

Table 3-1. Backplane, Functional Wiring List

						CPU										IN	PUT/0	OUTP	UT					·						MEM	ORY								
REF NO.	SIGNAL	TIMING AND CONTROL	ROM CONTROL	MICRO- INSTRUCTION DECODER 1	MICRO- INSTRUCTION DECODER 2	ARITHMETIC/ LOGIC	INSTRUCTION REGISTER DECODER	I/O CONTROL	I/O BUFFER	DIRECT MEMORY ACCESS	SELECT CODE 25	SELECT CODE 24	SELECT CODE 23	SELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11	SELECT CODE 10	X.Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER	X-Y DRIVER/ SWITCH		INHIBIT DRIVER LOAD	DATA CONTROL	INHIBIT DRIVER	X-Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER	X-Y DRIVER/ SWITCH	FRONT PANEL (OPERATOR OR CONTROLLER)	POWER SUPPLY	REF NO
		Α1	A2	А3	Α4	A5	А6	Α7	A8	А9	A10	A11	A12	A13	A14	A15	A16	A17	A18		A20	A21	A22	A23	A101	A102	A103	A104	A105			A108	A109	A110	A111	A112	A24	A25	
1	ААВ					26	78																		1112														1
2	AAFF			52			5																																2
3	ABF			66	21																																		3
4	ADR		68	16																			<u></u>	<u> </u>															4
5	ALU0				13	58	79																																5
6	ALU14				38	22																																	6
7	ALU15				35	21	77																																7
8	ALX14				41	7																																	8
9	ALX16				9	23	FD.																										-						9
10	AR0				36	45																																	10
11	ARS				84		18														. 2																		11
12	ARSS	77			33						3 = 11										7 == 1).														77 = 11				12
13	BAFF			43	32																																		13
14	CIN				14	41	84																																14
15	СЈМР	60			62																																		15
16	CL		51	13																																			16
17	CLC							10	66	44	21	21	21	21	21	21	21	21	21	21	21	21	21	21															17
18	CLF				76			5	51	24	7	7	7	7	7	7	7	7	7	7	7	7	7	7															18
19	CLK	51		1		61																																	19
20	CLK1	72		79																																			20
21	CLK2	84			69		31		70																														21
22	CLK3 Note 3	(78)		81				(56)	42	76									7 1			Ir = I	771							1111	(69)			1			(64)	T-	22
23	CMEFF	70					55																						1										23
24	CMF0	77						25																		-													24
25	CMOV	76			61																																		25
26	COND				11															S. 1																			26
27	COUT			50	56	+40+	11													Î															Ī				27
28	CPEN	52			19	Name of London														1																	43	-+	28
29	CR		38	75																																			29
30	CRS		-	1 - 2007 - 1000-		j = j				82	13	13	13	13	13	13	13	13	13	13	13	13	13	13) = 1i		1 = 1		K 11	1				77	147			30
31	СТЗ	10							64																														31
32	CW Note 4						(2)	-	district 5 1 1 1 1	(36)	- 1			1 1			-1-0-5				-	911	111								(76)	-	-27-10	75	- 1		(56)	-	32
33	DECM Note 5	(42)																													(6)						60		33
34	DIV			83	58								-	-																									34
35	DTRY			(25)	用作的"特"																										(81)						76		35
36	EDT									115.1	62	62	62	62	62	62	62	62	62	62	62	62	62	62											-+				36
37	EEOP		64	68						100 100 125		_																		\dashv									37
		A1	A2	А3	Α4	A5	A6	Α7	A8	A9	A10									-								-		_								A25	

4. Leadwires are from A6-73 to A107-76 and A9-36 to A24-55.

NOTES: 1. Shaded pin numbers indicate source of signal. 2 O Indicates pins interconnected by a leadwire which is twisted with a grounded leadwire. 3 Leadwires are from A1-78 to A24-64 and A7-56 to A107-69.

5. Leadwires are from A1-42 to A107-6 and A1-42 to A24-60.

Table 3-1. Backplane, Functional Wiring List (Continued)

						CPU										IN	PUT/0	OUTP	UT										<u>_</u>	MEM	IORY								
REF NO.	SIGNAL	TIMING AND CONTROL	ROM CONTROL.	MICRO- INSTRUCTION DECODER 1	MICRO- INSTRUCTION DECODER 2		7	I/O CONTROL	I/O BUFFER	DIRECT MEMORY ACCESS	SELECT CODE 25	SELECT CODE 24	SELECT CODE 23	SELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11	SELECT CODE 10	X-Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER	X-Y DRIVER/ SWITCH	INHIBIT DRIVER	INHIBIT DRIVER LOAD	DATA CONTROL	INHIBIT DRIVER	X-Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER			POWER SUPPLY	REF NO.
		A1	A2	А3	A4	A5	A6	A7	А8	А9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A101	A102	A103	A104	A105	A106	A107	A108	A109	A110	A111	A112	A24	A25	
38	ENF	50	ļ		1984 A 121		ļ	4	57	29	46	46	46	46	46	46	46	46	46	46	46	46	46	46	ļ												-		38
39	ENOV	eyse (Caro			51		83				ļ														<u> </u>	<u> </u>											ļ		39
40	ENRM	58	63			-	-		ļ																	ļ						<u> </u>				ļ	 		40
41	ENSS		alies EU la	ਂ 61 ਂ		ļ	15							<u> </u>												ļ						ļ					ļ		41
42	EOP	46	65	\$P	55	ļ	 	SPET SE			<u> </u>			ļ																		ļ					12		42
43	EPRSI			<u> </u>	ļ			42			ļ			<u> </u>			<u> </u>		ļ							<u> </u>											12 22		43
44	EXTEND		-		10		82			28	<u> </u>														-	-					-						- 22		44 45
45	FBFF6					-		31		 	-			<u> </u>					 					-	 	ļ							-		-	-	-		46
46	FBFF7		-	-			-	28		30					-	<u></u>			<u> </u>					ļ	 	ļ					<u> </u>	-	 				21		47
47	FETCH	67	-		64		- 00		-				-	ļ					 				ļ	-	-								 -						48
48	FLAG			-	23		80	71	<u> </u>								410	4/49	ALAG	ALAG	AIAO	4/49	in altrain	AMAGE								-					-		49
49	FLG1		-		-	-	-	34	-		AIAD	4/49	AMO	4/49	1/40	A MO	49	7743	4/45	4,43	4/45	7/13		Eller Service	-	<u> </u>							<u> </u>				 		50
50	FLG2 FN0		-		CC	50	.	34	-		4/42	P/45	9743	TAKE SAL	4/43	4/45									 						<u> </u>						-		51
51 52	FN1			1	66	46	 		-		l	i			<u> </u>				<u> </u>				<u> </u>	<u> </u>	 	 													52
				-	4	56		-	-																 						<u> </u>		ļ			 	 		53
53	FN2 FN3			 	5	55		<u> </u>	-		<u> </u>														 	<u> </u>										<u> </u>	 		54
54 55	FRZ			## A	, L	35	40	ļ	 									<u> </u>	 												 				<u> </u>	 	 		55
	HIN (NOTE 3)	80 65		35	-	+	43	65	50		-								<u> </u>						╁	-					<u> </u>	 					74		56
56 57	HT6	05	 	75		1	 	9	50						-		-		-					-	 	 											1		57
58	IAK			+	-		-	14	84		10	10	10	10	10	10	10	10	10	10	10	10	10	10		-											 		58
59	IDEM0-3		-				ļ) Mede a	- 04	-	10	10	10	10	-	10		-		- 10			10	"					5/6										59
60	IDEM4-7	7-22-47	-	-		-	H-10-1		-	-	F = 1		-	7								1		-					11 - 7			4/5	i i				0		60
61	IDOMO *			-		 	+		†					ļ													25		10										61
62	ID1M0 *	7														-					7	(F= ±1)	TF T	1	100		27	1 (7		J C 1		-			1			62
63	ID2M0 *		 			†			<u> </u>	<u> </u>																	29		8										63
64	ID3M0 *		ļ	 		 																		†			31		9		1							-	64
65	ID4M0 *								†	†				<u> </u>											<u> </u>		33		37										65
66	ID5M0 *		<u> </u>				1						†													1	35	- 8	32										66
67	ID6M0 *		.	†		1	 		\dagger																		37		33										67
68	ID7M0 *		<u> </u>						1					t	<u> </u>	<u> </u>							<u> </u>			1	41		34								Ī		68
69	ID8M0 *			1		1	1		1																		43		31								Î		69
70	ID9M0 *		1		<u> </u>		†	†	†		<u> </u>																45		46										70
71	ID10M0 *		1	†	<u> </u>	†	1		†	1																	49		49										71
72	ID11M0 *		T	1		<u> </u>		1		1																	51		50										72
73	ID12M0 *		1		†	†		T	T		İ						<u> </u>										53		61										73
74	ID13M0 *																										55		69										74
		A1	A2	А3	Α4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A101	A102	A103	A104	A105	A106	A107	A108	A109	A110	A111	A112	A24	A25	
NOTES	: 1. Shac	led pin	numbei	rs indica	te sourc	ce of sig	ınal.	2. *	Indicat	es two l	eadwire	s per co	nnection	٦.	3. A2	4-74 p	in may a	also be a	source.																				

Table 3-1. Backplane, Functional Wiring List (Continued)

												·														τ											Wiring			
					T	·	CPU		Т			-	1		1	1	IN	PUT/0	OUTP	UT	I				Т	ļ.,					MEN	ORY		T		T		ر ڄ	1 1	
REF NO.	SIGNAL		TIMING AND CONTROL	ROM CONTROL	MICRO- INSTRUCTION DECODER 1	MICRO- INSTRUCTION DECODER 2	ARITHMETIC/ LOGIC	INSTRUCTION REGISTER DECODER	I/O CONTROL	I/O BUFFER	DIRECT MEMORY ACCESS	SELECT CODE 25	SELECT CODE 24	SELECT CODE 23	SELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11	SELECT CODE 10	X.Y DRIVER/ SWITCH	SENSE STACK/ SENSE AMPLIFIER	SENSE AMPLIFIER X.Y	DRIVER/ SWITCH	INHIBIT DRIVER	INHIBIT DRIVER LOAD	DATA CONTROL	INHIBIT DRIVER	X-Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER	X-Y DRIVER/ SWITCH	FRONT PANEL (OPERATOR OR CONTROLLER)	POWER SUPPLY	REF NO.
			A1	A2	А3	Α4	A5	A6	A7	A8		A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20 `	A21	A22	A23	A101	A102	A103 A	A104	A105	A106	A107	A108	A109		A111		A24	A25	
75	ID14M0	*								_	<u> </u>	<u> </u>	<u> </u>			<u></u>	ļ											57	200	70					<u> </u>				igsqcut	75
76	ID15M0	*				ļ	ļ	ļ	<u> </u>	<u> </u>		<u> </u>	<u> </u>															59		71					<u> </u>				\bigsqcup	76
77	ID16M0	*				ļ	ļ				ļ	ļ												ļ	ļ			61		15				<u> </u>						77
78	ID0M1	*				<u> </u>	 	ļ <u>.</u>	<u> </u>															ļ	ļ			26		14				L	<u> </u>					78
79	ID1M1	*				<u> </u>	ļ	<u> </u>	<u> </u>	<u> </u>		<u> </u>				ļ		ļ										28		11					 				\bigsqcup	79
80	ID2M1	*				ļ	ļ	<u> </u>	<u> </u>			<u> </u>																30		12			<u></u>	<u> </u>	ļ					80
81	ID3M1	*					ļ		<u> </u>					ļ	ļ													32		13					<u> </u>				igsqcut	81
82	ID4M1	*				ļ	ļ	ļ	ļ		ļ	ļ		-											ļ	ļļ		34	Ž.	38				ļ	<u> </u>					82
83	ID5M1	*						1	ļ	ļ	<u> </u>	<u> </u>	ļ	<u></u>		<u> </u>												36		43					<u> </u>				$\sqcup \sqcup$	83
84	ID6M1	*				ļ	<u> </u>	<u> </u>	<u> </u>	ļ	ļ	<u> </u>	ļ			ļ												38		41			<u> </u>	ļ	↓			ļļ		84
85	ID7M1	*				_	↓	ļ	.			ļ		ļ	<u> </u>	ļ		ļ						ļ		ļ		42	287	42			—	-	—				igsqcup	85
86	ID8M1	*					ļ	ļ	-	-	-	<u> </u>						<u> </u>										44	1	72				ļ	—				igsqcut	86
87	ID9M1	*					-	ļ	ļ																			46	- 55	68				ļ						87
88	ID10M1	*				ļ	-	-	ļ	ļ		<u> </u>																50		66				ļ					$\vdash \vdash \vdash$	88
89	ID11M1	*				ļ	 	-	ļ	ļ	-																	52		67				-					igwdapprox 1	89
90	ID12M1	*				_	-	ļ	-	-		-		1														54	- 5	65										90
91	ID13M1	*					-	ļ	ļ		ļ	ļ																56		62				ļ	-				\square	91
92	ID14M1	*																										58	3	63				-	-					92
93	ID15M1	*				ļ	-	-	-	-		_														-		60	8	64										93
94	ID16M1	*				-	ļ	<u> </u>	<u> </u>				ļ												ļ			62	- 3	16			<u> </u>	ļ	—			-	$\sqcup \sqcup$	94
95	ID0M2	*					-	-	ļ	-		ļ															25		3	26			<u> </u>	ļ	 				$\vdash \vdash \vdash$	95
96	ID1M2	*				-	ļ	<u> </u>	-		<u> </u>																27		26	19			<u></u>	-	 				igwdapprox I	96
97	ID2M2	*				ļ	ļ	<u> </u>	ļ	-		 															29	_	- 3	25				 	 				igwdapprox I	97
98	ID3M2	*					-	<u> </u>	ļ	-		-															31		- 5	24				-					igwdard	98
99	ID4M2	*	18.3.3.9	E				-	-									/ T * Sec. 11					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				33		- 2	53		1	-					1 - 1		99
100	ID5M2	*					-							hijinde actions	الاسترد الدياطة	de la company de			and comme	mar Later	en communication de		وو ۱ الاطواط المستديد	kending un	the state of the s		35			60	and province	on was trouble and			America de marco.	Contract Contract Stand	United States (States			100
101	ID6M2	*						-	+	-	-																37		7	59				-	-				$\vdash\vdash\vdash$	101
102	ID7M2	*				-	-		-	-	-																41	-		58					-				\vdash	102
103	ID8M2					-					-																43		-	52		Jan 11); +1			103
104	ID9M2 ID10M2	*					-		1			-															45			44 E1					-					104 105
105		-7-2-13	-			-		-							- :			-		-		_					49 51			51 45	-		_							106
106	ID11M2 ID12M2	*					+		-	-	-	-															53			76					-					106
107	ID12M2	*				ļ	-	 	-	+	-	-	<u> </u>														55			73			<u>'</u>	-	 			\longrightarrow		
108	ID13M2	*				 	 	 	 	+	-	-																-		74					 			\dashv		108 109
109 110	ID14M2	*					-	+	+	+	+	-															57 59			75				 	 					110
111	ID16M2	*						-	+	+	+															 	61			17				-				\dashv	\rightarrow	111
	ID IOIVIZ		A1	Α2	А3	A4	A5	A6	A7	Α0	Δ0	Δ10	Λ11	Λ12	Λ12	Δ14	Δ15	Δ16	Δ17	Δ10	Δ10	Δ20	Δ21	Δ22	V 23	Δ101	A102 A	103 4			Δ106	Δ107	Δ109	Δ100	Δ110	Δ111	Δ112	Δ24	Δ25	
NOTE	s: 1. 15.8.1	Shac	·			të sour	1		1		itës two	4				714	710	A 10	817	A10	713	720	741	722	723	1 2 10 1	7.02 7					7.107		1.103			2			7

Table 3-1. Backplane, Functional Wiring List (Continued)

						CPU										IN	PUT/	OUTP	UT											MEM	ORY						in the second	
REF NO.	SIGNAL	TIMING AND CONTROL	N ROM CONTROL	MICRO- INSTRUCTION DECODER 1	MICRO- INSTRUCTION DECODER 2	A ARITHMETIC/			% I/O BUFFER	6 MEMORY ACCESS	1	SELECT CODE 24	SELECT CODE 23	SELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11	+			CORE STACK/ SENSE AMPLIFIER			INHIBIT DRIVER LOAD		DRIVER	X-Y DRIVER/ SWITCH	SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER	X-V DRIVER/ SWITCH FRONT PANEL (OPERATOR OR	CONTROLLER) POWER	
112	ID0M3 *	1	AZ	AS	A4	AS	A6	A7	A6	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A101		A103	A104		A106	A107	A108	A109	A110	A111	A112 A2	4 A2	
113	ID1M3 *	1		-		 	 		-				<u> </u>			-	+-						<u> </u>	 	 	26 28		ļ	20								_	112
114	ID2M3 *					-	 		†	1	 				 		1							-		30		1	23								-	113 114
115	ID3M3 *							+			1	ļ		 -	 			1				ļ			+	32			21						-			115
116	ID4M3 *						 				1			 	 	 	 	 	 				<u> </u>			34			57									116
117	ID5M3 *	1		†		1	1	1					ļ		<u> </u>	 	 		 							36			54								1	117
118	ID6M3 *	†		1		1	1		†							 	 	 	 				 	 		38			56						-		+	118
119	1D7M3 *	1		1		†	 	1	 									 	-				 		1	42			55					+	-+			119
120	ID8M3 *	1		1					1	†							 						 			44	 		78									120
121	ID9M3 *	1			 											<u> </u>		 	<u>.</u>				 		1	46			79		-						-	121
122	ID10M3 *	†											<u> </u>	ļ		<u> </u>	1		:				 	1		50			δĺ									122
123	ID11M3 *						1	1	1									 							1	52		1	80								1-	123
124	ID12M3 *		-				i									}		 								54			84									124
125	ID13M3 *			İ			1											<u> </u>						 		56	 										_	125
126	ID14M3 *													} !										-		58	1		77 83				9				_	126
127	ID15M3 *	1	<u> </u>												 		1		İ							60	 		82		- 	İ				_	+	127
128	ID16M3 *	1	i -												i			 					 			62			18.					-	-		+	128
129	1D0M4 *																1	ļ											A MONTH		$\overline{}$	10		25			1	129
130	ID1M4 *																						 		1					İ		7	1	27				130
131	ID2M4 *																						<u> </u>	İ	1				1			8		29			1	131
132	ID3M4 *																								1	1						9		31				132
133	ID4M4 *																															37		33			1-	133
134	ID5M4 *																															32		35			1	134
135	ID6M4 *																												1	1		33		37			\top	135
136	ID7M4 *																															34		41			1	136
137	ID8M4 *																															31		43	$\neg \uparrow$	TO BEST TOPES		137
138	ID9M4 *																														0	46		45				138
139	ID10M4 *																															49		49				139
140	ID11M4 *																												1			50		51	$\overline{}$	Name of the last		140
141	ID12M4 *																															61		53		D. James		141
142	ID13M4 *																															69		5 5				142
143	ID14M4 *																														96 63	70		57				143
144	ID15M4 *		<u> </u>	ļ																											1	71		59				144
145	ID16M4 *	<u> </u>																													5	15		61				145
146	ID0M5 *	_	<u> </u>			ļ																									ii, ù	14		26				146
147	ID1M5 *	ļ							<u> </u>																							31		28				147
148	ID2M5 *	ļ	<u> </u>					ļ																	<u> </u>	ļ					7.0	12		30				148
		A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	Δ13	Δ14	Δ15	Δ16	Λ17	Λ12	Λ10	Δ20	Λ21	A22	V 23	1 4 10 1	1 4102	1 4103	Δ104	A 105	A 106	A107	1100	A100	110	A111	A112 A2	4 42	5

Table 3-1. Backplane, Functional Wiring List (Continued)

			Г				CPL					т —																					, I. De	скрии	e, Fund	Juonai	WIIIII	; Last ((COIIIII)	lueu)
				T	Τ.	T_			- 1	1		 	1			1	IN	PUT/O	OUTPU	JT T					γ			· · · · · · · · · · · · · · · · · · ·			MEN	10RY						_		
REF NO.	SIGNAL		TIMING AND CONTROL	ROM	MICRO- INSTRUCTION	MICRO- INSTRUCTION	ARITHMETIC/ LOGIC	INSTRUCTION	I/O CONTROL	I/O BUFFER	DIRECT MEMORY ACCESS	SELECT CODE 25	SELECT CODE 24	SELECT CODE 23	SELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11	SELECT CODE 10	X.Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER	X-Y DRIVER/ SWITCH	INHIBIT DRIVER	INHIBIT DRIVER LOAD	DATA CONTROL	INHIBIT DRIVER	X-Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER	X.Y DRIVER/ SWITCH	FRONT PANEL (OPERATOR OF CONTROLLER)	POWER SUPPLY	RE No
			A1	A2	А3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17		A19	A20	A21	A22	A23	A101	A102	A103	A104			A107	A108	A109	A110	A111	A112	A24	A25	İ
149	ID3M5	*	_	<u> </u>								<u> </u>																					113		32					14
150	ID4M5	*		<u> </u>	<u> </u>	<u> </u>		-	_			<u> </u>	ļ																				38		34					15
151	ID5M5	*		ļ	-	 	 	<u> </u>	<u> </u>																								43		36					15
152	ID6M5	*		<u> </u>	-	-		 				ļ																					41		38					15
153	ID7M5	*			 		_	-		ļ	-																						42		42					15
154	ID8M5	*		ļ	ļ	<u> </u>	.	<u> </u>		ļ																							72		44					15
155	ID9M5	*				ļ		 		<u> </u>	ļ																						68		46					15
156	ID10M5	*			╀		-	-	-			<u> </u>																					66		50					15
157	ID11M5	*			-	-	-	1		<u> </u>	 	<u> </u>														ļ							67		52					15
158	ID12M5	*			-	ļ	 	-	<u> </u>	-																							65		54					15
159	ID13M5			<u> </u>	+	 	-	-	 	ļ																							62		56					15
160 161	ID14M5 ID15M5	*			-			+-	-	<u> </u>	-																						63		58					16
162	ID16M5	*		<u> </u>	 	-	 		-	-																							64		60					16
63	ID0M6	*			 	-	-	 	+																								16		62					16
164	ID1M6	*			<u> </u>		+	 	+		-																						26			25				16
65	ID2M6	*			-	<u> </u>	+	-	 	<u> </u>	-															 							19			27				164
66	ID3M6	*				 		 	+	ļ																ļ							25			29				16
67	ID4M6	*			 			-			-															-							24			31				16
68	1D5M6	*		-	ļ	ļ	+		-	-																							53			33				16
69	ID6M6	*					+		 	 																							60			35				16
70	ID7M6	*								<u> </u>											-+												59		-	37				169
71	ID8M6	*	-						1	-								-	-	-	-	-	-										58			41				170
72	1D9M6	*					1														-			-									52			43			_	171
73	ID10M6	*		-																-	-					200							44	-		45				172
74	ID11M6	*																													_		51			49	\rightarrow			173
75	ID12M6	*				10004	-									-	+									-				-			45			51				170
76	ID13M6	*							†																								76			53				175
177	ID14M6	*					†								-																-		73	-+		55	\longrightarrow			176
78	ID15M6	*		-				 																									74	\dashv		57		$-\!$		177
79	ID16M6	*							†											-	-+	\dashv								-+			75			59	\dashv	\longrightarrow		178
80	ID0M7	*												1				+			\dashv									-	+	- 4	17	-+		61	\rightarrow	\dashv		179
81	ID1M7	*						†															-+			 							20	-		26	\rightarrow	-+		180
82	ID2M7	*																		-						-					-	-		+		28	-	\rightarrow	-	181
83	ID3M7	*	11.7			7=4				-				= 0		111			F 1, 1						1 - 1			7 - 3		-			22			30			-	182
184	ID4M7	*															$\neg +$	-									-+			-		7-	57	-		32	-+		-	183
85	ID5M7								5 - 1	-						7-1									1	T-17		-	-			-	54		_	34	-			184
			A1	A2	А3	A4	A5	A6	A7	A8	A9	Δ10	A11	A12	Δ13	Δ14	Δ15	A16	A17	010	010	100					-					-		\rightarrow			\rightarrow	A24		100

Section III 2100A

Table 3-1. Backplane, Functional Wiring List (Continued)

		1				CPU				1						IN	PUT/0	או טכ	UT											MEM	UKY						I	1	
REF NO.	SIGNAL	TIMING AND CONTROL	ROM	MICRO- INSTRUCTION DECODER 1	MICRO- INSTRUCTION DECODER 2	_	INSTRUCTION REGISTER DECODER	I/O CONTROL	I/O BUFFER	DIRECT MEMORY ACCESS	SELECT CODE 25	SELECT CODE 24	SELECT CODE 23	SELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11	SELECT CODE 10	X-Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER	X-Y DRIVER/ SWITCH		INHIBIT DRIVER LOAD	DATA	INHIBIT DRIVER		CORE STACK/ SENSE AMPLIFIER			FRONT PANEL (OPERATOR OR CONTROLLER)		REF NO.
		A1	A2	А3	Α4	A5	А6	Α7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A101	A102		A104	A105	A106	A107	A108	A109	A110		A112	A24	A25	100
186	ID6M7 *																<u> </u>															56			38				186
187	ID7M7 *																		L													55			42				187
188	ID8M7 *																															78			44				188
189	ID9M7 *																															79			46				189
190	ID10M7 *																							ļ								81			50				190
191	ID11M7 *																															80			52				191
192	ID12M7 *																	<u> </u>														84			54				192
193	ID13M7 *						T																									77			56				193
194	ID14M7 *																															83			58				194
195	ID15M7 *																															82			60				195
196	ID16M7 *	1																														18			62				196
197	Spare	 							<u> </u>																														197
198	IEN5	1		<u> </u>		†	1	35	79						Ì																						24		198
199	IMPV	24	 						68							†																							199
200	INCM	(37)	†	 		1 -	1	 							İ				Î												(79)						33		200
201	INCP	43		 	-	3	+	-	 																														201
	INM	100	67	3	il q	-	 	-	-		<u> </u>				-	 																							202
202		22	+ 07	"		+	+	45		-	 				 	 			İ																				203
203	INT	1 22	+			-	+	+	77		 				+					<u> </u>																			204
204	INT5		-	1			+	66	13		26/25	26/35	26/25	26/35	26/35	26/25	26/35	26/35	26/35	26/35	26/35	26/35	26/35	26/35	-												71		205
205	IOB0	-	-		-	-	-	 		 			 	29/38		+	29/38			29/38					-												70		206
206	IOB1	 	 	ļ	ļ	+		-	12		30/41		30/41				30/41			30/41			30/41														68		207
207	IOB2	-	-	-			-		11				64/45	+			_			64/45													1 = 15				72	70 0	208
208	IOB3	-	-	-		-	-	+	17						+		\rightarrow	+	+	+	-												-				54		209
209	10B4				-		-	-	16											77/42					-	0:		E; :						-	-		53		210
210	IOB5						-	+	15	-			_	_			_			80/51				1	-	-				-							63		211
211	IOB6		+	1		-	-	+	10	 	+		-		+	+	+	 	+	81/53						 	-			<u> </u>			 				61		212
212	IOB7		_	-	-	 		+	32	-				+			+	• 		84/52						+	-	 		<u> </u>		 	 				32		213
213	IOB8				<u> </u>	-	-	1	31			1								27/54						 	-			+			 			-	34	-	214
214	IOB9								29											28/56						+	-	 	 	 			+				46	\vdash	215
215	IOB10			<u> </u>					28	1										31/58									 	 		 	-				44		216
216	IOB11								27											60/55						 	-	ļ				<u> </u>	 	ļ <u>.</u>			-		217
217	IOB12								26											78/57							ļ		ļ	 		-	 				14	-	
218	IOB13								25				1							79/61							-		ļ			ļ	 			<u> </u>	16		218
219	IOB14								30									-		82/65						<u> </u>	ļ	ļ	<u> </u>	<u> </u>		-	<u> </u>			<u> </u>	20		219
220	IOB15								34		83/74	83/74	83/74	83/74	83/74		_			83/74	83/74	83/74				ļ		<u> </u>	<u> </u>	ļ			ļ	ļ		ļ	18	 	220
221	IOBI 16										18	18	18	18	18	18		+	18		18	18	18			<u> </u>	<u> </u>		ļ	 		-	ļ	ļ		ļ			221
222	IOG			76				43	46	45	15	15	15	15	_					_	15	15	15			_	ļ	<u> </u>	ļ				 				6		222
		A1	A2	А3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14		A16				<u> </u>	A21				A102		A104	A105	A106	A107	A108	A109	A110	A111	A112	A24	A25	

Table 3-1. Backplane, Functional Wiring List (Continued)

		+																													Table	3-1. B	аскріа	ne, Fui	nctiona	l Wirin	g List	(Conti	iued)
						CPL	-			·			,			IN	PUT/	OUTP	UT											MEM	IORY								
REF NO.	SIGNAL	TIMING AND CONTROL	ROM	MICRO- INSTRUCTION DECODER 1	MICRO- INSTRUCTION DECODER 2	ARITHMETIC/ LOGIC	INSTRUCTION REGISTER DECODER	I/O CONTROL	I/O BUFFER	DIRECT MEMORY ACCESS	SELECT CODE 25	SELECT CODE 24	SELECT CODE 23	SELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11	SELECT CODE 10	X-Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	SENSE AMPLIFIER	DRIVER/ SWITCH	INHIBIT DRIVER	INHIBIT DRIVER LOAD	DATA	INHIBIT	X.Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER	K-Y DRIVER/ SWITCH	FRONT PANEL (OPERATOR OR CONTROLLER)	POWER SUPPLY	REF NO.
		A1	A2	А3	Α4	A5		A7	A8	A9	A10	A11	A12	A13	A14	A15		A17	A18	A19	A20	A21	A22	+	A101					A106	A107	A108	A109			A112		A25	l
223	IOG1	83					21	38																	1	7.1.02	,		7100	A100	Alo	ATOO	7.100	1	A	ATTE	A24	AZJ	223
224	IOGE						2.	37	83						<u> </u>				<u> </u>					<u> </u>	† — —							 	 	 	 				224
225	101							53	82		24	24	24	24	24	24	24	24	24	24	24	24	24	24			$\neg +$							 	 		4/80		225
226	100			77					78	32	20	20	20	20	20	20	20	20	20	20	20	20	20	20	†							-		 	<u> </u>		10		226
227	Spare						E., A																											1					227
228	IR0		42				33	68																	<u> </u>									<u>† </u>	<u> </u>	ļ			228
229	IR1		45				36	63																										<u> </u>					229
230	IR2		26				56	67																															230
231	IR3		50				34	30																										<u> </u>					231
232	IR4		72				62	26																															232
233	IR5		66				70	29																															233
234	IR6	<u> </u>	84				69		41																			į.									\Box		234
235	IR7	ļ	75				75		38																														235
236	IR8	ļ	76				57		45																														236
237	IR9		61		54		63		65																														237
238	IR10		83	17			59																																238
239	IR11	9	80	71	24		58		63																														239
240	IR12	3	79	<u> </u>			44																																240
241	IR13	7	78	<u> </u>		ļ	49							ļ				•																					241
242	IR14	5	81			-	46																																2 42
243	IR15	12	82			-	45			-7		71 1																											243
244	IRAR IRQ1	196	52			-		-			-		-		(N 4/4-He)	eri valvesi etcer							allow a streaming						_										244
245	IRQ2							79							6	33				1			6 33	33			1301									11111			245
247	IRQ3							82						出版を開発																									246
248	IRQ4					-	-	78					6 ²¹ 10	THE RESERVE OF THE PERSON NAMED IN							- 0																		247
249	IRQ5			1			- man - de la compa	83		to an extraction are in the		and and				1	in energy in a	e desception with a	LERENDE	and the state of the		· ·			and the course of	1944111144411		** **** - 202 1. /								- · · ·	Willia Render	Date (Brain Strain)	248
250	IRQ6			-			 	81			33								3	de l'agi							-										\longrightarrow		249
251	IRQ7						 	84			u Prov						G		13311																		\longrightarrow		250
252	JMPS	73			ac.			-						-			* * * * * * * * * * * * * * * * * * *																						251
253	JMPF			36	76 49								-														-	-									\longrightarrow		252
254	JSB		69		18					-																	+	-+-											253
255	Spare				there is a second			 			59	59	59	59	59	59	59	59	59	59	59	59	59	59	-			-	-+	-+									254
256	LPE								76)								-		-55			33	35	33	-						(70) -						\longrightarrow		255
257	LSI				La B	24																							-	7	(9)						\rightarrow	\dashv	256
258	MBSY			(29)	CHAIL LANGE		Major Di																								(v)	-					(78)		257
259	МС				20	12			1																		+		_	18					\dashv	\dashv	<u>(9)</u>		258 259
		A1	A2	А3	Α4	A5	A6	Α7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A101	A102 A	103 A	104 A	105 4	106	A107	A108	A109	A110	A111	A112	A24	A25	209
NOTES:	1. Shad	led pin n	numbers	indicat	e source	e of sign	nal.	2. * 1	ndicate																	unded lea													

Table 3-1. Backplane, Functional Wiring List (Continued)

						CPU							-			INF	PUT/C	UTPU	JT						Γ		3-1. B			MEM				•		T			
REF NO.	SIGNAL	TIMING AND CONTROL	ROM	MICRO- INSTRUCTION DECODER 1	_		INSTRUCTION REGISTER DECODER	I/O CONTROL	I/O BUFFER	DIRECT MEMORY ACCESS	SELECT CODE 25	SELECT CODE 24	SELECT CODE 23	SELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11	SELECT CODE 10	X-Y DRIVER/ SWITCH		CORE STACK/ SENSE AMPLIFIER		INHIBIT DRIVER	INHIBIT DRIVER LOAD	DATA CONTROL	INHIBIT DRIVER		CORE STACK/ SENSE AMPLIFIER			FRONT PANEL	POWER SUPPLY	REF NO.
		A1	A2	А3	A4	A 5	А6	Α7	A8	А9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A101		A103		A105	A106		A108		A110			A24	A25	
260	моро									ļ																	3				68		\longrightarrow			\sqcup			260
261	MOD1									<u> </u>																	4				63				\longmapsto	\longrightarrow			261
262	MOD2																							ļ		3					55				\longmapsto				262
263	MOD3																									4					56		\longrightarrow						263
264	MOD4								ļ															ļ			ļ.,,,,,				57			3	\longmapsto				264
265	MOD5					<u>.</u>			<u> </u>																						58			4		\longrightarrow			265
266	MOD6									ļ			<u> </u>											ļ			ļ				54				3	\vdash			266
267	MOD7								ļ	<u> </u>														<u> </u>							53				4	\vdash		_	267
268	MOD0/1							ļ	 		ļ															<u> </u>	 	46			59				\vdash	 			268
269	MOD2/3											ļ	ļ											ļ	46						60					\vdash			269
270	MOD4/5								<u> </u>	ļ														ļ	-		ļ				62		46		\rightarrow				270 271
271	MOD6/7						ļ			<u> </u>														ļ							61		\longrightarrow	3 48 - 12 B	SC(2) 2 1 9 1/4	46			
272	MOD0T/2T								ļ	ļ	<u> </u>			ļ										ļ		5	5				80			5	5				272
273	Spare				 		ļ	-	- 43 1 10 2			<u> </u>		<u> </u>												5	-				80	\longrightarrow	\longrightarrow					-	273 274
274	MPC						13		80		<u> </u>																												274
275	MPV				24 70 - 3 (8)(0)		4		36		<u> </u>													-			-						\longrightarrow		\vdash				-
276	MPY			59	60				-	-	<u> </u>																				_	\longrightarrow			\vdash				276
277	MR0							<u> </u>	 	ļ													_		35		-	35			3	\longrightarrow	35		\longrightarrow	35			277
278	MR1																							-	36			36			5		36		\longrightarrow	36			278
279	MR2										<u> </u>		<u> </u>	ļ										-	37			37			8		37		\longrightarrow	37			279
280	MR3								-	-				 											33			33 32			10		33 32		\vdash	33 32			280 281
281	MR4			-													51 - 1	,							32 31			31		11 = 1	23		31			31	1		282
282	MR5					-																		-	49			49			25		49			49			283
283	MR6								1												-	100	0 = 20		52			52	True C	14.1	26		52		100.0	52			284
284	MR7					-	-			-															51			51			27		51			51			285
285	MR8		-										-				J								53	-	(53			4	1 = 3	53			53			286
286	MR9 MR10								A Property	1															56			56			30		56			56			287
287	MR10 MR11								R. Tal	7,500	V-11		-												55			55			32		55		\Box	55			288
288	MRTY	1 10							0.11					4 7											54/57			54/57			84		54/57			54/57			289
289	MSG NOTE 3			-		 	-	1	+	+	1												<u> </u>	 		6	6				83			6)	6				290
290	MWTY NOTE 4	-	 	 		 		1	-	-			 	 											50/58	<u> </u>	$\overline{}$	50(58)			28		5058			50/58			291
292	OVFF		-	 	68	-	8	†	+	+-	 	 	 										 	 	†		<u> </u>						9		\Box		51		292
293	P1A	81		 	65		+ 🗂			+	t	 	 					<u> </u>					†	<u> </u>				<u></u>					$\overline{}$		\Box				293
294	PEH	اٽ		-	A Partie Control		+	1	69		†	<u> </u>	<u> </u>	 	_				1			-	 	<u> </u>			<u> </u>					$\overline{}$				\Box	52		294
295	PEX	63		27		 			58	-		 	t	†										t			†							-	\Box	\Box			295
296	PH1A	41		† -	+	t	 	1	53		t	T	<u> </u>														†										49		296
		A1	A2	А3	A4	A5	A6	A7		+	A10	-	+	+					-					† 	1		1								$\overline{}$	A112	404	A 25	

^{4.} Leadwires are from A104-58 to A107-28 and A107-28 to A109-50/58 and first used on prefix 1449.

Table 3-1. Backplane, Functional Wiring List (Continued)

T						CPU	 I									INI	PLIT/C	DUTP	UT.						Ι –					MEN						d Wiring	, 2.50 (iucu)
		Q		NO.	NO 2	-										1101	01/0	JUTP	01							X X	X X			IVIEIV	UKY)X	X X		VEL R OR ER)		
REF NO.	SIGNAL	TIMING AND CONTROL	ROM	MICRO- INSTRUCT	MICRO- INSTRUCTION DECODER 2	ARITHMETIC/ LOGIC	INSTRUCTION REGISTER DECODER	I/O CONTROL	I/O BUFFER	DIRECT MEMORY ACCESS	SELECT CODE 25	SELECT CODE 24	SELECT CODE 23	SELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11	SELECT CODE 10	X-Y DRIVER/ SWITCH	CORE STA SENSE AMPLIFIEF	CORE STA SENSE AMPLIFIER	X-Y DRIVER/ SWITCH	INHIBIT	INHIBIT DRIVER LOAD	DATA CONTROL	INHIBIT	X-Y DRIVER/ SWITCH	CORE STAC SENSE AMPLIFIER	CORE STAC SENSE AMPLIFIER	X-Y DRIVER/ SWITCH	FRONT PANEL (OPERATOR OR CONTROLLER)	POWER SUPPLY	REF NO.
		A1	A2		Α4	A5	А6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A101						A107	A108		A110	A111	A112	A24	A25	
297	PH1B	30					<u> </u>	12	71		L																										50		297
298	PH2	28			ļ								ļ 																								28		298
299	PH3	26		SUAN SIGN	ļ	<u> </u>	ļ	ļ	ļ	ļ																											30		299
300	PH5			A1				13]																			56		300
301	PINH Note 3	<u> </u>					ļ	ļ	ļ																												79		301
302	PNLA			60	28		<u> </u>		<u> </u>																												38		302
303	PNLB			72	26	<u> </u>		ļ			<u> </u>																										41		303
304	PNLP		ļ	32		<u> </u>																															36		304
305	PON Note 4	6	ļ		ļ	ļ		(8)			66	66	66	66	66	66	66	66	66	66	66	66	66	66				42			70						67		305
306	POPIO		ļ	ļ				23			17	17	17	17	17	17	17	17	17	17	17	17	17	17													65		306
307	Spare		ļ			ļ																																	307
308	Spare					ļ		- C - C C C C C C C C C C C - C C C C C C C C C C C - C C C C C C C C C C C - C C C C C C C C C C - C C - C C -						ļ																									308
309	PRH5/PRL4		ļ	1	ļ	<u> </u>		41	37	62																													309
310	PRH6/PRL5		ļ	ļ				51	23																														310
311	PRH11/PRL10			ļ		ļ	ļ	ļ															23	- 3 ···															311
312	PRH12/PRL11		ļ	1			<u> </u>	ļ	ļ													23	dog 3 000 i																312
313	PRH13/PRL12		ļ	 			<u> </u>														23	3																	313
314	PRH14/PRL13			1					ļ											23	3																		314
315	PRH15/PRL14			ļ					<u> </u>										23	3																			315
316	PRH16/PRL15					ļ			ļ									23	3.																				316
317	PRH17/PRL16								 								23	3																					317
318	PRH21/PRL20			 	ļ										23	3																							318
319	PRH22/PRL21													23	3	11 7																							319
320	PRH23/PRL22			-									23	3																									320
321	PRH24/PRL23			-					ļ																														321
322	PRH25/PRL24		-	1		-					- 23					×1	astruse a			-								161		+	- +	-		4-		tr Share-events-based as	6	(100	322
323	PRL17			ļ		-		52								1	3																						323
324	PRSE			 				22							<u></u>																						7		324
325	PRSI	4		ļ				_																													13		325
326	PWU						-	7																							\longrightarrow					26		TB2-5	326
327	QSI PD15		-		42 74	83 9																																	327
328	RB15				1 1 1 1 1 1 1	751																																	328
329	RBE				22	5																																	329
330	RBS1				4.15 H)	64												- 7																					330
331	RBS2 RCIR				25	62		F4																										1					331
333	RCTR			33 19			0.1	54									-																						332
555	noin	A 2	-	-	0.4	0.5	81			100		0.55		160		2.25			145																		\longrightarrow		333
	: 1. Shade	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A101	A102 A	4103 A	104 /	4105	A 106	A107	A108	A109	A110	A111	A112	A24	A25	I

Section III 2100A

Table 3-1. Backplane, Functional Wiring List (Continued)

I		T				CPU										IN	PUT/0	OUTP	JT											MEN	10RY								
REF NO.	SIGNAL	TIMING AND CONTROL	ROM CONTROL	MICRO- INSTRUCTION DECODER 1	MICRO- INSTRUCTION DECODER 2		INSTRUCTION REGISTER DECODER	I/O CONTROL	I/O BUFFER	DIRECT MEMORY ACCESS	SELECT CODE 25	SELECT CODE 24	SELECT CODE 23	SELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11	SELECT CODE 10	X.Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER	X-Y DRIVER/ SWITCH	INHIBIT DRIVER	INHIBIT DRIVER LOAD	٦	INHIBIT DRIVER	X-Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER	X-Y DRIVER/ SWITCH	FRONT PANEL (OPERATOR OR CONTROLLER)	POWER SUPPLY	REF NO.
		A1	A2	А3	Α4	A5	A6	Α7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23		A102			A105	A106		A108	A109	A110	A111	A112	A24	A25	
334	READ	54		28	27					31																ļ			<u> </u>		(72) (82)						77		334
3 3 5	RESET	8 10	70		30		9	20	75																ļ						(82)								335
336	RFE			W. 7 11 JOH	67	11	68			21/45/11/20															ļ	<u> </u>						ļ	ļ						336
337	RIOB		- N - Nam - F	34					61	42																ļ				ļ	ļ	ļ							337
338	RIR0		32				16		ļ																	ļ			ļ			ļ							338
339	RIR1		33				14		ļ																	<u> </u>						ļ	ļ						339
340	RIR2		28				10			<u> </u>					ļ										ļ	ļ	ļ					ļ							340
341	RIR3		27				12		<u> </u>	_																ļ	ļ					ļ				-			341
342	RIR4		22				22		<u> </u>	<u> </u>	ļ	<u> </u>													<u> </u>	ļ	ļ		<u> </u>	ļ	ļ	ļ					ļ		342
343	RIR5		23				23		<u> </u>	ļ																ļ						<u> </u>	ļ						343
344	RIR6		16				24																		ļ	ļ	ļ												344
345	RIR7		17				26		ļ														<u> </u>		ļ				ļ			ļ							345
346	RIR12		58		82																					ļ	ļ		ļ	ļ			-						346
347	RIR17		57	12						ļ		ļ		ļ											 	 	<u> </u>		<u> </u>				-	<u> </u>					347
348	RJMP	存	56											<u> </u>											ļ	<u> </u>	<u></u>	ļ	ļ		ļ								348
349	ROM8		15	57					ļ					ļ											ļ	ļ	ļ	ļ	ļ 										349
350	ROM9		18	58					ļ														ļ			ļ						<u></u>	ļ						350
351	ROM10		24	54											ļ										<u> </u>			ļ	ļ										3 51
352	ROM11		25	51								ļ																											352
35 3	ROM12		37		78							ļ			ļ																	ļ							353
354	ROM13		36		77			ļ				ļ														ļ													354
355	ROM14		35		80											.3.															,								355
356	ROM16		34		79																											L	ļ						356
357	ROM16		14		43																																		357
358	ROM17		13	11																																			358
359	ROM18		8	14			<u> </u>	<u> </u>	L	ļ																ļ													359
360	ROM19		7	4													ļ																						360
361	ROM20		3	9								ļ		<u> </u>	ļ											ļ			ļ										361
362	ROM21		4		37						<u> </u>	ļ		ļ									ļ									<u> </u>	<u> </u>						362
3 63	ROM22		5		34		<u> </u>							ļ									ļ				ļ												363
364	ROM23		6		29			<u> </u>			<u> </u>	<u> </u>			ļ	ļ	<u> </u>						ļ				ļ			ļ		<u> </u>	<u> </u>						364
36 5	RP9			21		27					<u> </u>	ļ	ļ	L		L							ļ			ļ				ļ		ļ							365
36 6	RPHI			23		28	<u> </u>	<u> </u>			<u> </u>	 	ļ	ļ	ļ		<u> </u>						ļ		<u> </u>		ļ			ļ		<u> </u>							366
367	RPLO			6		57																	<u> </u>			<u></u>				ļ	ļ								367
368	RRSB			24		3 5/36																	<u> </u>		ļ	<u> </u>	<u></u>		<u> </u>	ļ	ļ						23		368
369	RSAV	71	41		17						<u> </u>	ļ	ļ			ļ															ļ	ļ							369
370	RSP1			10		17						ļ					ļ													ļ		ļ							370
1		A1	A2	А3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A101	A102	A103	A104	A105	A106	A107	A108	A109	A110	A111	A112	A24	A25	. 1

Table 3-1. Backplane, Functional Wiring List (Continued)

T						CPU					<u> </u>					IN	PUT/0	OUTP	IIT						<u> </u>					MEM				, ,				(Contin	
REF NO.	SIGNAL	TIMING AND CONTROL	ROM	MICRO- INSTRUCTION DECODER 1	MICRO- INSTRUCTION DECODER 2		1	I/O CONTROL	I/O BUFFER	DIRECT MEMORY ACCESS	SELECT CODE 25	SELECT CODE 24	SELECT CODE 23	SELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11	SELECT CODE 10	X-Y DRIVER/	CORE STACK/ SENSE	CORE STACK/ SENSE AMPLIFIER	X-Y DRIVER/ SWITCH		INHIBIT DRIVER LOAD	DATA	INHIBIT DRIVER	X-Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER	X-Y DRIVER/ SWITCH	FRONT PANEL (OPERATOR OR CONTROLLER)	POWER SUPPLY	REF NO.
		Α1	A2	А3	Α4	A5	A6	A7	A8	А9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23		A102		A104				A108	A109		A111	A112		A25	<u> </u>
371	RSP2			. 7		15																												<u> </u>					371
372	RSP3			5		13																											<u> </u>	ļ		L			372
373	RSP4			8		11																			<u> </u>		ļ	ļ						ļ		igsqcut			373
374	RSSP	69						46			<u> </u>	<u> </u>																						ļ	\square	igsqcup	'	igsqcut	374
375	RUN	2									50	50	50	50	50	50	50	50	50	50	50	50	50	50	L		ļ							<u> </u>			D F-028-18-1479		375
376	RW						(74) 27			34																		ļ			75		L'	ļ			57		376
377	RWCW			31			27						<u> </u>	<u> </u>	<u> </u>		<u> </u>																					igspace	377
378	SA0														ļ										<u> </u>	15_	15				13			15 18	15		 '		378
379	SA1										1			ļ												18	15. 18 17		<u> </u>		11			18	18		 '	igsqcut	379
380	SA2															ļ	L									17	17				7			17	17		└		380
381	SA3																									20	20				9			A 1 4 1 1	20		ļ'	igsqcut	381
382	SA4											<u> </u>														19					17			19	19		<u> </u>	igsqcut	382
383	SA5																									22		*			15			22	22				383
384	SA6																									21	21	e e			19			21	21		<u> </u>	igsqcut	384
385	SA7																									63	63	E			21			63	63		<u> </u>	igsqcup	385
386	SA8																									64	64				31			64	64		<u> </u>		386
387	SA9																									65	65				33			65	65				387
388	SA10																									66	66				35			66	66				388
389	SA11																									67	67	3			37			67	67				389
390	SA12																		_							68	68				41			68	68				390
391	SA13																									69	69				43			69	69				391
392	SA14				-		1	0					ji T			2										70	70				45			70	70	1			392
393	SA15																									. 71	7,1				49			71	71				393
394	SA16											U														72	72				71			72	72				394
395	SAM			67		77																																	395
396	SB0		46			72	32			ali nadionitana ni mangan 1 7 man		-						× +	-					×				(4)			16			1		- Authoritie			396
397	SB1		44		l	10190	60	****	4	n barkoo)		1	1																		18								397
398	SB2		29			76	61	60	₆	1110							il T			(1 = 1)	711) T				100			5	1	12) = i					1 = 4	75.50	398
399	SB3		. 30			59	33		6	13																					14	- 1							399
400	SB4		19			52		Application and the	THE RESERVE AND LOSS OF THE PARTY OF THE PAR	12																					29								400
401	SB5		20			51	64		8	10																					38								401
402	SB6	XTI	12			49	-		9	20																					20		715						402
403	SB7		9			43			24	-11		1		†	1																22								403
404	SB8		53			31	52	la ji	14	5									- 1		47 II	li Ti						1	111		44			7.71			74.1		404
405	SB9		54			32	-		18	3					1																46								405
406	SB10		43			29	11		19	9 ")			1														(34								406
407	SB11		49			30	53		20	7																					36								407
		A1	A2	А3	A4	A5	-	A7	A8			1	1	1	1					T				T	1				0.405	2.400	4407	4 4 0 0	1.400	A 110	A111	A112	A24	A25	

Section III

Table 3-1. Backplane, Functional Wiring List (Continued)

2100

						CPU										IN	PUT/0	OUTP	UT								··			MEN	IORY						$\overline{}$		
REF NO.	SIGNAL	TIMING AND CONTROL	ROM CONTROL	MICRO- INSTRUCTION DECODER 1	MICRO- INSTRUCTION DECODER 2	ARITHMETIC/	9 REGISTER DECODER	1/O CONTROL	% I/O BUFFER	DIRECT 6 MEMORY ACCESS	D SELECT CODE 25	SELECT CODE 24	SELECT CODE 23	ELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11				CORE STACK/ SENSE AMPLIFIER			INHIBIT DRIVER LOAD	DATA			CORE STACK/ SENSE AMPLIFIER				POWER SUPPLY	REF NO.
408	SB12	+~-	31	AS	A4	10	38	A/	21	8 A9	Alu	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A101	A102	A103	A104	A105	A106	A107	A108	A109	A110	A111	A112	A24	A25	400
409	SB13		21			8	37		22	4														<u> </u>	<u> </u>	-					51 42	 	 	 	├──-				408
410	SB14	1	10			6	42		23	6		ļ												<u> </u>			-				50	-		 	\vdash	\vdash		\vdash	409 410
411	SB15	14	11		75	18, Ser 4 (1)	41		33	84		<u> </u>		 										1	 	 	1	<u> </u>			52		 		$\vdash \vdash \vdash$	+			411
412	SC1	 			71			49	74																						- 52		 	$\vdash \vdash \vdash$	\vdash		8		412
413	SC5	†		73				44	35																				-				 			\vdash	-		413
414	SC6		 	†				33		50					 				1 .													-	 	$\vdash \vdash \vdash$					414
415	SC7							36		49				†								ļ											<u> </u>				\rightarrow		415
416	SCE	66																														<u> </u>	 		\vdash		1112		416
417	SCF0	68									<u> </u>																 						 		\vdash	17	5		417
418	SCL0							69		51						16	34							16								<u> </u>				154			418
419	SCL1							70		52					16	34			1				16	34													\neg		419
420	SCL2							72		59				16	34							16	34		†														420
421	SCL3							73		58			16	34							16	34						†							\Box				421
422	SCL4	Î					Ì	74	İ	60		16	34							16	34			<u> </u>	i									\vdash			一		422
423	SCL5							75		56	16	34							16	34			ļ														$\overline{}$		423
424	SCL6							76		54	34							16	34															\Box		\Box			424
425	SCL7							77		57							16	34						†——											\sqcap	\Box	$\neg \uparrow$		425
426	SCM0							16		55																									\Box				426
427	SCM1							15		53.							14	14/37	14/37	14/37	14/37	14/37	14/37	14/37															427
428	SCM2							18		61	14/37	14/37	14/37	14/37	14/37	14/37	37																						428
429	sco	79																																			3		429
430	SCRY	44					28																																430
431	SELM	. 53		(22)					60	35																					66						42		431
432	SELT			30	59																										(74)			7		i î			432
433	SFC				70			17	52		5	5	5	5	5	5	5	5	5	5	5	5	5	5															433
434	SFM			74		82																																	434
435	SFS				72			24	59		25	25	25	25	25	25	25	25	25	25	25	25	25	25															435
436	SFSB										73	73	73	73	73	73	73	73	73	73	73	73	73	73															436
437	SHIFT			78	83																																		437
438	SIOB	1		46					62	33																										3.6	75		438
439	SIR								56		32	32	32	32	32	32	32	32	32	32	32	32	32	32															439
440	SKF	17	J. T. Pab		16			21			12	12	12	12	12	12	12	12	12	12	12	12	12	12				L				الشا		1.2					440
441	SKIP		77		81		6											- 1																					441
442	SL1			65	6	AFT	71	644	J= V				2 1					K Tall							1		1	A = 0		711		21.41		13.34					442
443	SL4	 			50		50																										<u> </u>				[Ш	443
444	Spare										68	68	68	68	68	68	68	68	68	68	68	68	68	68									<u> </u>	igsquare			$ \longrightarrow $	igsquare	444
1		A1	A2	А3	Α4	A5	A6	A7	A8	A9	I A10	Δ11	A12	I A13	I A 1/1	A 15	A16	A 17	A18	A10	A20	A 21	1 122	1 422	I 4404	1 4 102	1 4402	1 4 104	A 10E	1 4 100	A107	1 1100	L 4400 '	(A 110)			A 24	A25	

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Table 3-1. Backplane, Functional Wiring List (Continued)

		T-				CDI					·																						1	, 1 411	nctional	wiring	LIST (Contin	iuea)
		-	T	Τ _	Τ=	CPL		Т	T	T	 		1	T	T	11/	IPUT/	OUTI	PUT	····	т	-			1			_	·	MEN	/IORY	′	-						
REF NO.	SIGNAL	TIMING AND CONTROL	ROM	MICRO- INSTRUCTION	MICRO- INSTRUCTION	ARITHMETIC/ LOGIC	INSTRUCTION REGISTER DECODER	I/O CONTROL	I/O BUFFER	DIRECT MEMORY ACCESS	SELECT CODE 25	SELECT CODE 24	SELECT CODE 23	SELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11	SELECT CODE 10	X-Y DRIVER/ SWITCH	CORE STACK/ SENSE	CORE STACK/ SENSE AMPLIFIER	X-Y DRIVER/ SWITCH	INHIBIT DRIVER	INHIBIT DRIVER LOAD	DATA	INHIBIT	c-Y ORIVER/ WITCH	ORE STACK/ ENSE MPLIFIER	CORE STACK/ SENSE AMPLIFIER	X-Y DRIVER/ SWITCH	RONT PANEL DPERATOR OR ONTROLLER)	POWER SUPPLY	REF NO.
		A1	A2	А3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15		A17	A18		+	+	A22		A101		A103			A106								A25	4
445	Spare																		†					1		702	1.00	7104	7103	7100	7107	1 7100	A109	ATTO	AIII	ATTZ	A24	A25	445
446	SPH1B	31	74														1					1		† -			 	<u> </u>	-			 	+	 	+	\rightarrow			445 446
447	SPH2	34	73						72															1				<u> </u>	<u> </u>		 	+	 		+-+	-+	-+		447
448	SPH3	35	55				ļ																1					†	<u> </u>			<u> </u>	 	[\rightarrow	-+		448
449	SPH5		<u> </u>	38			ļ			46															<u> </u>	 						1	-			\dashv			449
450	SQM			70		75																								<u> </u>					\vdash	-+	$\overline{}$		450
451	SR1	francisco succession		62	12		72																							 		†			\vdash	-+	$\overline{}$		451
452	SRAR	61	60					ļ	ļ						L																<u> </u>					_	_		452
453	SRH	74			ļ		Land Co. Do Boy July																							T		<u> </u>			\vdash		62	-1	453
454	SRIR	55	62	42	52		76	Î																											\Box				454
455	SRQ10	╂		-					ļ	72														119											\Box	$\neg +$	\dashv		455
456 457	SRQ11	-		 	-	 	-	ļ		73													19																456
	SRQ12	+		 	 	1	<u> </u>	ļ		70									<u> </u>			19															$\neg \uparrow$		457
458 459	SRQ13 SRQ14	 		-	-		 	 		71									<u> </u>	No. of the last of	19																		458
460	SRQ15	 		<u> </u>	┼			ļ	ļ	63										19																			459
461	SRQ16	-			-	-		 	-	65									19				<u> </u>																460
462	SRQ17			<u> </u>	 			<u> </u>		75				-				19																					461
463	SRQ20	+		+					-	77						i ga taga	19						ļ																462
464	SRQ21	 								64					19	19																							463
465	SRQ22	+		+						68					1119																								464
466	SRQ23				 		-	ļ		67 66				. 19									ļ																465
467	SRQ24	+		 				 		69		19	19													_													466
468	SRQ25			†	 			 			פר												-													\bot			467
469	SSCY	62								-74	i la la la constante de la con																												468
470	SSIN	64																																					469
471	STA			69		81				1	-			- J		etti	7	erecester ii							į			+								a stile	The state of		470
472	STB			63		79					\rightarrow																												471
473	STC							3	56	43	22	22	22	22	22	22	22	22	22	22	22	22	22	22															472
474	STCLK	36	59	18					10 A 15													~~		- 22													\dashv		473
475	STF				73			6	49		9	9	9	9	9	9	9	9	9	9	9	9	9	9			-+								-	-	\perp		474
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478	STOF			82		84				man, did anno																	\dashv				73						73		477
479	STP			64		63		Ta I	J.A.		6	==1			1	1 = 1						= 1								-				-		+	+	_	478
480	STQ			.80		73																			-	-+		-+		-+			-+			-	+		479
481	Т3					1			† ; • n	37	11	11	11	11	11	11	11	11	11	11	11	11	11	11	-+	-					- 14		-	-		-	+	_	480
	Vicetific controller-actioning	A1	A2	А3	A4	A5	A6	Α7	A8	A9	A10	Λ11	A12	A12	014	0.15	240	0.5-							-	-											124 A		481

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NO.		TIMING AND CONTROL	ROM CONTROL	MICRO INSTRI DECOD	MICRO INSTRI DECOE	ARITH	INSTRI REGIST DECOL	I/O CONTROL	I/O BUFFER	DIRECT MEMORY ACCESS	SELECT CODE 25	SELECT CODE 24	SELECT CODE 23	SELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11	SELECT CODE 10						INHIBIT DRIVER LOAD		INHIBIT DRIVER	X-Y DRIV SWIT	CORE SENSI AMPL	CORE SENSI AMPL	X-Y DRIVER/ SWITCH		POWER SUPPLY	
		A1	A2	А3	A4	A5	А6	Α7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A101	A102	A103	A104	A105	A106	A107	A108	A109	A110	A111	A112	A24	A25	482
482	T4	16							44	80																									\vdash	\vdash	66	-	483
483	Т6			26				58	43	81																										\vdash			484
484	TBS1				45	53						ļ	ļ																							\vdash		-	485
485	TBS2				44	54			ļ			<u></u>	ļ																							-		-	486
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487	WCR1							32		83																									\vdash	\vdash		-	488
488	WCR2							27		79													ļ												\vdash	\vdash		\vdash	489
489	WSP1		. 11	55		65							ļ										ļ													\vdash		-	
490	WSP2			56		67			<u> </u>		L	<u> </u>													 										\vdash	\vdash	<u>'</u>	 	490 491
491	WSP3			45		69								ļ									ļ												├ ──'			 	
492	WSP4			49		71								<u> </u>																			206		 	20/00	<u> </u>	<u> </u>	492
493	XT1 NOTE 3																								30/38			30/38			65		30/38		 	30/38		<u> </u>	493
494	XT2 NOTE 4													Ļ									<u> </u>		29/34			29/34			(64)		29/34)		ļ	29/34			494
495	LOAD																									- 1					67				<u> </u>		(9)		495
496	IEN10							50									8	8	8	8	8	8	8	8/23											 	\longrightarrow		ļ	496
497	IEN20							55			8	8	8	8	8	8/23																					<u> </u>		497
498	T5			37				11	89	26																							2				1212		498
499	PNLT			7	63						1 == 1										-		1														35		499
500	UABF	59			31																				<u> </u>														500
501	ZABF	97			53																												1 1 1 1						501
502	P1SK	13				Brei	29	-																				.1											502
503	Spare																																		-				503
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516	Spare						1																																516
517	Spare	\top	t	1		1		T											,														<u></u>						517
518	Spare																						1	466	0400	4400	A 100	0101	A105	A 100	A107	Δ100	Δ100	Δ110	Δ111	A112	Δ24	Δ25	518
		A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A101	A102	A103	A104	A105	A 106	A107	AIUS	A 109	ATTO	14111	17112	A24		_

Section III

^{4.} Leadwires are from A104-34 to A107-64 and from A107-64 to A109-34 and first used on prefix 1449.

Table 3-1. Backplane, Functional Wiring List (Continued)

		1				CDL					T						DUT/	OLITA																ane, Fu		MT-1		1	1
					T _	CPU T		т —	T	1	 	T -		Τ		IN	PUT/	JU [P	UT	,			ī	1	-		T			MEM	ORY		T				ا س	1	
REF NO.	SIGNAL	TIMING AND CONTROL	ROM CONTROL	MICRO- INSTRUCTION DECODER 1	MICRO- INSTRUCTION DECODER 2	ARITHMETIC/ LOGIC	INSTRUCTION REGISTER DECODER	I/O CONTROL	I/O BUFFER	DIRECT MEMORY ACCESS	SELECT CODE 25	SELECT CODE 24	SELECT CODE 23	SELECT CODE 22	SELECT CODE 21	SELECT CODE 20	SELECT CODE 17	SELECT CODE 16	SELECT CODE 15	SELECT CODE 14	SELECT CODE 13	SELECT CODE 12	SELECT CODE 11	SELECT CODE 10	X-Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER	X-Y DRIVER/ SWITCH	INHIBIT DRIVER	INHIBIT DRIVER LOAD	DATA CONTROL	INHIBIT DRIVER	X-Y DRIVER/ SWITCH	CORE STACK/ SENSE AMPLIFIER	CORE STACK/ SENSE AMPLIFIER	X-Y DRIVER/ SWITCH	FRONT PANEL (OPERATOR OR CONTROLLER)	POWER SUPPLY	REF NO
İ		A1	A2	А3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A101	A102	A103	A104	A105			A108	A109	A110	A111	A112	A24	A25	┪
519	Spare																																	1	7	 	1	7,20	519
520	-2V	47/48	-	ļ									BUS			ļ							->	47/48	47/48	-				BL	Js —					47/48	47/48	TB1-2,3	
521	-12V										69/70	-		ļ		 		- BUS -							+	73/74	73/74							73/74	73/74			TB2-2	****
5 2 2	-20V																									75/76		75/76	35/36			35/36	75/76	-	75/76			TB2-1	4
523	+4.85V	39/40	-		-		1						BUS											39/40	+					— Н — ВU					+		_	TB1-4,5	
524	+4.85V (lamp)															†																		<u> </u>				TB1-4,5	
525	+12V					ļ	†				43/44	-	ļ					BUS -						43/44	13/14	13/14	13/14						-	13/14	13/14		100,02	TB2-3	_
526	+20V							_	1			<u> </u>													9/10	1.0/	1.0,	9/10		*			9/10		10,14	9/10	\vdash	TB1-1	4
527	+30V										36	36	36	36	36	36	36	36	36	36	36	36	36	36	<u> </u>			5,10	\dashv				3/10	 		3/10	-	TB2-4	-
528	GND	1/2	-			<u> </u>	!			ļ			- BUS -											1/2	1/2					— . — ви	18					1/2	1/2	CV 4072 N N N N	-
529	GND	85/86								!		ļ	BUS													-				— вс — вс							_	TB1-6,7	_
530	GND (lamp)	[] +					(in p					711		1										00/00	50750	In = iit			j- 116		7.5				1	65/66	_	TB1-6,7	_
531	GND																									9/10	9/10				1/2			9/10	9/10		1		
532	GND (Bus)											Des 1						VI F T I						7 = 1		3/10	3,10			#/85	1/2	17-1-0		9/10	3/10		_	TB1-6,7 TB1-6,7	_
533	TSEN1							†																						#/85 51							+		
534	TSEN2					 	<u> </u>		i e						<u> </u>										-				7.0	53				 	\vdash	\vdash	\vdash	TB2-7	
535	IPU								İ																81					53				\vdash	\vdash	\vdash	igwdard	TB2-9	
-					<u> </u>	1				<u> </u>	 									1					81		-							├ ──	\longrightarrow	 		TB2-6	53 5
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	- 1-35 ming-opening global (stallights)	A1	A2	A3	Α4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A101	A102	A103	A104	A105 A	106	A107	A108	A109	A110	A111	A112	A24	A25	



Section III 2100

Table 3-2. Front Panel Connector XA24, Point-to-Point Wiring List

FROM XA24, PIN	то	FROM XA24, PIN	то	FROM XA24, PIN	то
1,2	XA16-1,2	31	NC	62	XA1-74
3	XA1-79	32	XA11-27	63	XA15-53
4	XA7-53	33	XA1-37	64	XA1-78*
5	XA1-68	34	XA11-28	65	XA12-17
6	XA10-15	35	XA4-63	66	XA8-43
7	XA7-22	36	XA3-32	67	XA7-8*
8	XA8-74	37	NC	. 68	XA15-30
9	XA107-67*	38	XA4-28	69	XA24-86
10	XA8-78*	39,40	XA23-39,40	70	XA16-29
11	XA1-66	41	XA4-26	71	XA16-26
12	XA7-42	42	XA9-35	72	XA16-64
13	XA1-4	43	XA4-19	73	XA9-38
14	XA10-57	44	XA12-55	74	XA8-50
15	NC	45	XA24-2	75	XA9-33
16	XA16-61	46	XA13-31	76	XA3-25
17	NC	47,48	XA23-47,48	77	XA9-31
18	XA8-34	49	XA8-53	78	XA3-29*
19	NC	50	XA7-12	79	\$1A-8*
20	X A8-30	51	XA6-8	80	XA24-4
21	XA4-64	52	XA8-69	81,82	XA22-39,40
22	XA4-10	53	XA14-51	83,84	XA17-1,2
23	XA5-36	54	XA14-77	85,86	XA18-1,2
24	X A7-35	55	XA9-36*		
25	NC	56	XA7-13		
26	NC	57	XA9-34*		
27	NC	58	XA1-62		
28	XA1-28	ll 59	XA1-64		
29	NC	60	XA1-42*		
30	XA1-26	61	XA15-52		

^{*} Indicates leadwire which is twisted with a grounded leadwire.

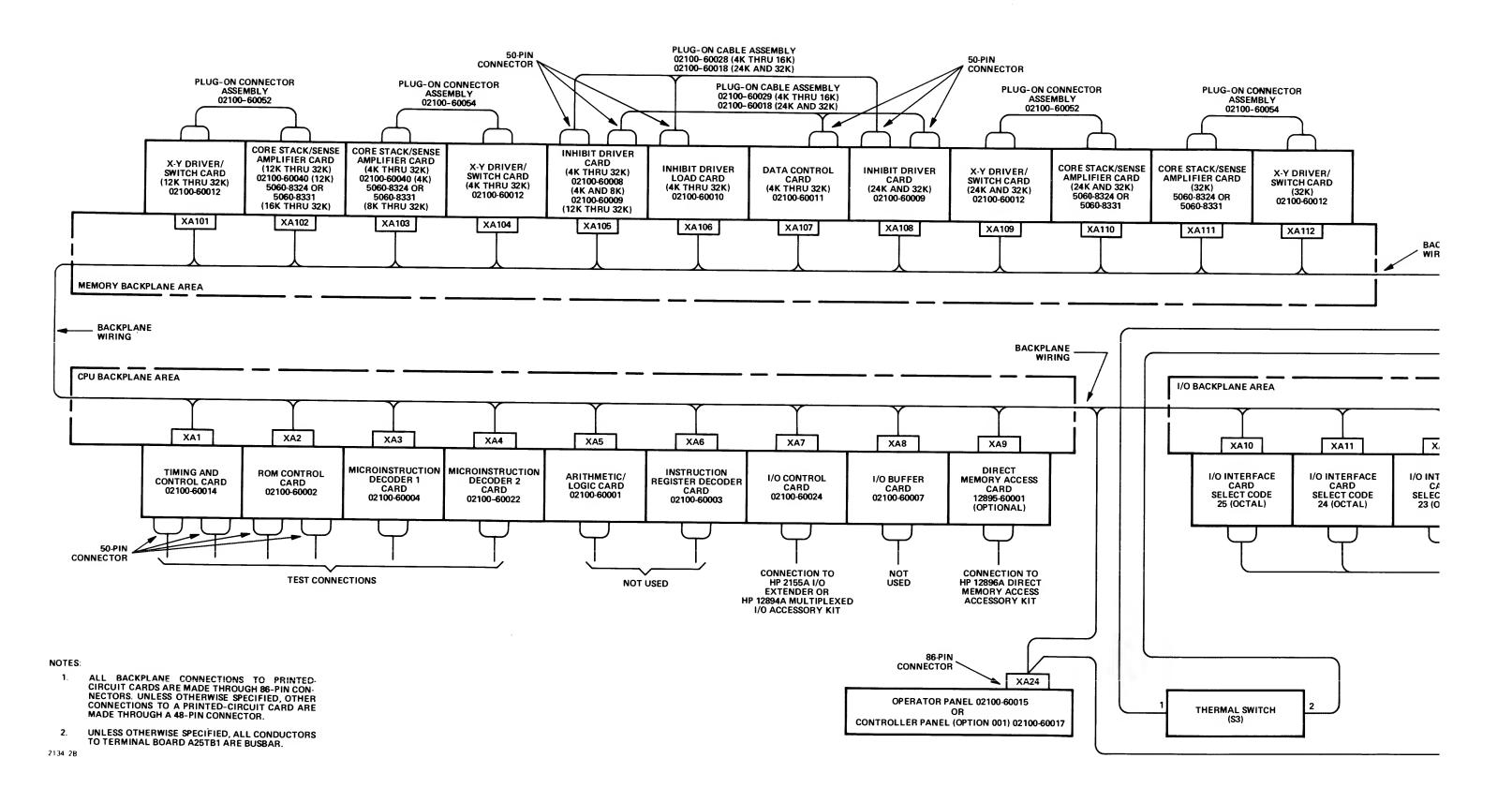
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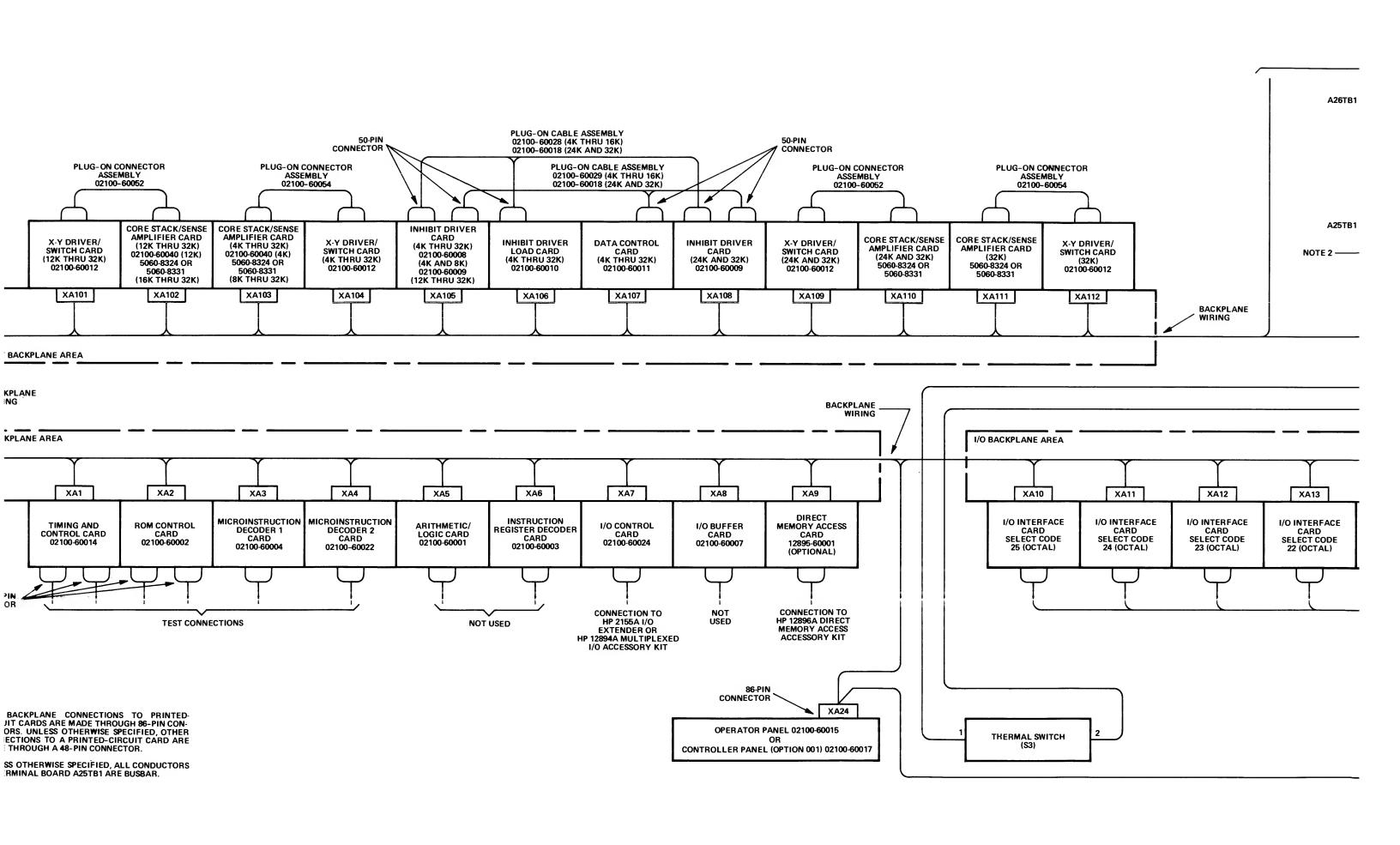
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Table 3-3. Power Distribution, Point-to-Point Wiring List

A25TB1-1 A25TB1-1	XA101-9,10					
	AA101-3,10	wht-blk-red		S1B-5	A26TB1-5	gra
	XA112-9,10	wht-blk-red		S1B-6	A26TB1-4	wht-brn-gra
A25TB2-1	XA102-75,76	wht-grn		S3-1	A25TB2-9	wht-blk
A25TB2-1	XA111-75,76	wht-grn		S3-2	A25TB2-8	wht-brn
A25TB2-2	XA23-69,70	wht-vio		XA23-43,44	A25TB2-3	wht-red
A25TB2-2	XA112-73,74	wht-vio		XA23-69,70	A25TB2-2	wht-vio
A25TB2-3	XA23-43.44	wht-red	ļ	XA101-9,10	A25TB1-1	wht-blk-red
A25TB2-3	XA112-13,14	wht-red	l	XA101-13,14	XA111-13,14	wht-red
A25TB2-4	XA112-18	wht-orn	ł	XA101-40	A26A1E5	orn
A25TB2-5	XA112-26	wht-blk-brn		XA101-48	A26A1E4	vio
A25TB2-6	XA112-22	wht-blu	l	XA101-73,74	XA110-73,74	wht-vio
A25TB2-7	XA106-51	wht-yel		XA101-85	A26A1E1	blk
A25TB2-8	S3-2	wht-brn		XA102-14	A26A1E6	wht-red
A25TB2-9	S3-1	wht-blk		XA102-73	A26A1E3	wht-vio
A25TB2-9	XA106-53	wht-blk		XA102-75,76	A25TB2-1	wht-grn
A26A1E1	XA101-85	blk		XA103-75	A26A1E2	wht-grn
A26A1E2	XA103-75	wht-grn		XA104-10	A26A1E7	wht-blk-red
A26A1E3	XA102-73	wht-vio		XA106-51	A25TB2-7	wht-yel
A26A1E4	XA101-48	vio		XA106-53	A25TB2-9	wht-blk
A26A1E5	XA101-40	orn	1	XA110-73,74	XA101-73,74	wht-vio
A26A1E6	XA102-14	wht-red		XA111-13,14	XA101-13,14	wht-red
A26A1E7	XA104-10	wht-blk-red	1	XA111-75,76	A25TB2-1	wht-grn
A26A1E8	XA112-18	wht-orn		XA112-9,10	A25TB1-1	wht-blk-red
A26J1	XA112-22	wht-blu		XA112-13,14	A25TB2-3	wht-red
A26TB1-3	S1B-2	wht-yel-grn		XA112-18	A25TB2-4	wht-orn
A26TB1-4	S1B-6	wht-brn-gra		XA112-18	A26A1E8	wht-orn
A26TB1-5	S1B-5	gra	1	XA112-22	A25TB2-6	wht-blu
A26TB1-7	S1B-1	wht-red-gra		XA112-22	A26J1	wht-blu
S1B-1	A26TB1-7	wht-red-gra		XA112-26	A25TB2-5	wht-blk-brn
S1B-2	A26TB1-3	wht-yel-grn		XA112-73,74	A25TB2-2	wht-vio

LOR			
-brn-gra			
-blk -brn			
-red			
-vio -blk-red			
red			
-vio			
t-red t-vio			
t-grn			
t-grn t-blk-red			
t-yel			
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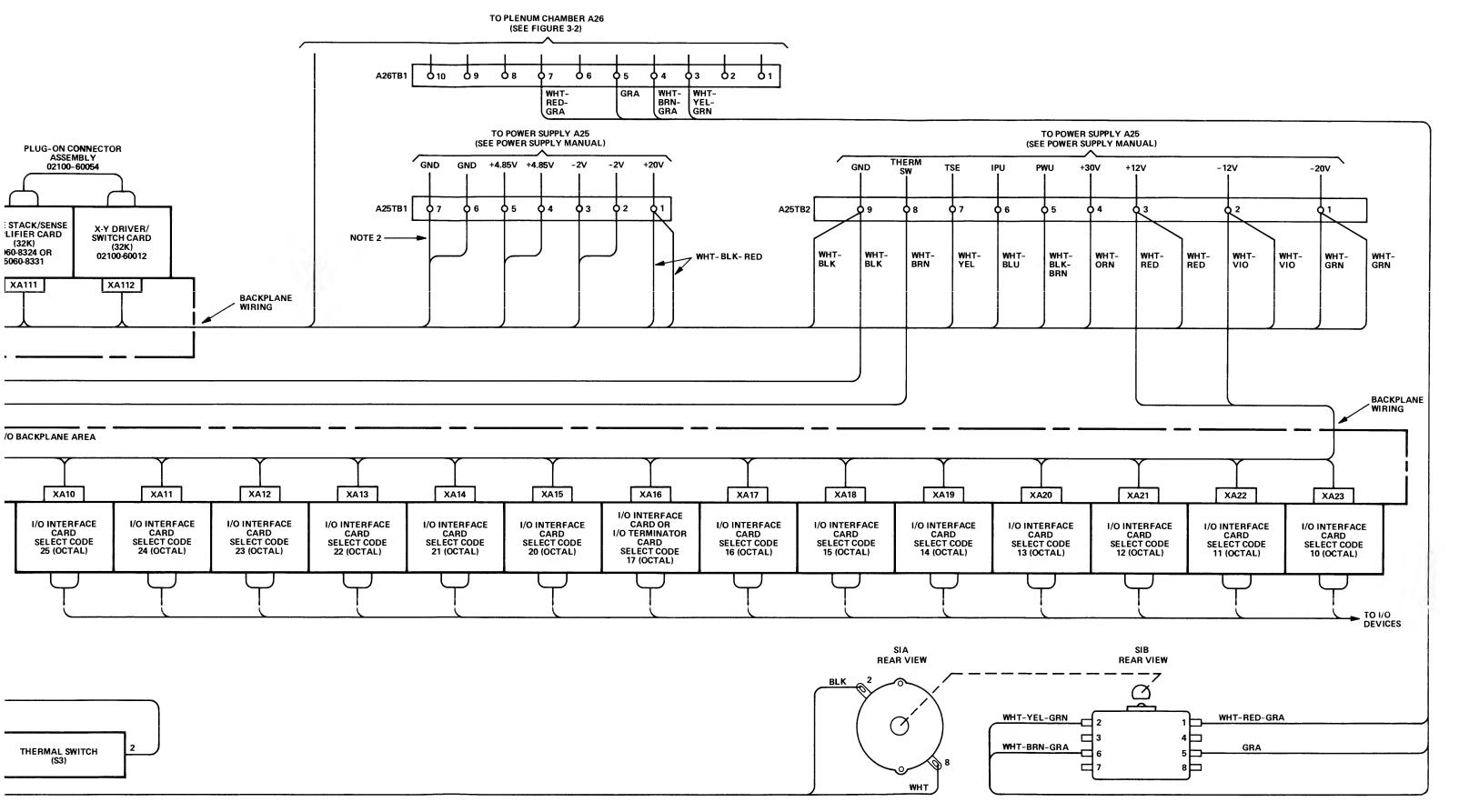


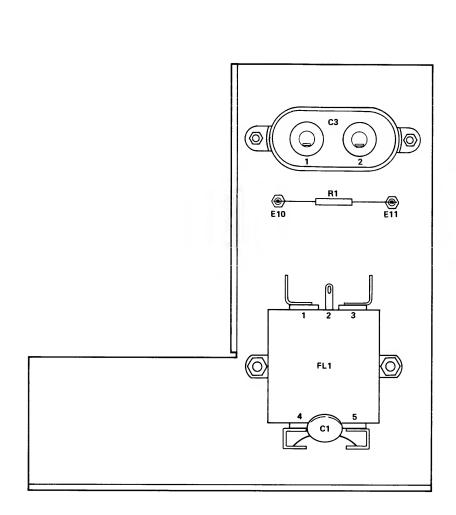
Figure 3-1. Backplane, Wiring Diagram

2100A

Table 3-4. Plenum Chamber A26, Point-to-Point Wiring List

FROM	то	COLOR	FROM	то	COLOR
A1E1	XA101-85	blk	TB1-2	XF1-1	wht-blk-gra
A1E2	XA103-75	wht-grn	TB1-2	P1-1	blk
A1E3	XA102-73	wht-vio	TB1-3	S1B-2	wht-yel-grn
A1E4	XA101-48	vio	TB1-3	FL1-4	wht-yel-grn
A1E5	XA101-40	orn	TB1-4	FL1-5	wht-brn-gra
A1E6	XA102-14	wht-red	TB1-4	S1B-6	wht-brn-gra
A1E7	XA104-10	wht-blk-red	TB1-5	S1B-5	gra
A1E8	XA112-18	wht-orn	TB1-5	XF2-1	wht-yel
B1-J1	TB2-1	blk	TB1-5	A25A6E1	gra
B1-J1	TB2-2	blk	TB1-6	A25A6E3	wht-blu-gra
B2-J1	TB2-1	blk	TB1-7	S1B-1	wht-red-gra
B2-J1	TB2-2	bik	TB1-7	TB2-1	wht-red-gra
C3-1	E10	wht-grn-gra	TB1-7	A25A6E2	wht-red-gra
C3-2	TB1-1	wht-red-gra	TB1-7	A25TB3-11	wht-red-gra
E9	P1-3	grn	TB1-8	A25TB3-6	wht-yel-gra
E9	FL1-2	grn-yel	TB1-9	TB2-2	wht-grn-gra
E9	Shield*	grn-yel	TB1-9	A25TB3-12	wht-grn-gra
E10	C3-1	wht-grn-gra	TB1-10	XF2-2	wht-vio
E11	XF2-1	gra	TB1-10	A25TB3-5	wht-vio-gra
FL1-1	TB1-1	wht-gra	TB2-1	B1-J1	blk
FL1-2	E9	grn-yel	TB2-1	B2-J1	blk
FL1-3	XF1-2	gra	TB2-1	TB1-7	wht-red-gra
FL1-4	TB1-3	wht-yel-grn	TB2-2	B1-J1	blk
FL1-5	TB1-4	wht-brn-gra	TB2-2	B2-J1	blk
J1	XA101-81	wht-blu	TB2-2	TB1-9	wht-grn-gra
P1-1	TB1-2	blk	XF1-1	TB1-2	wht-blk-gra
P1-2	TB1-1	wht	XF1-2	FL1-3	gra
P1-3	E9	grn	XF2-1	TB1-5	wht-yel
TB1-1	C3-2	wht-red-gra	XF2-1	E11	gra
TB1-1	FL1-1	wht-gra	XF2-2	TB1-10	wht-vio
TB1-1	P1-2	wht			

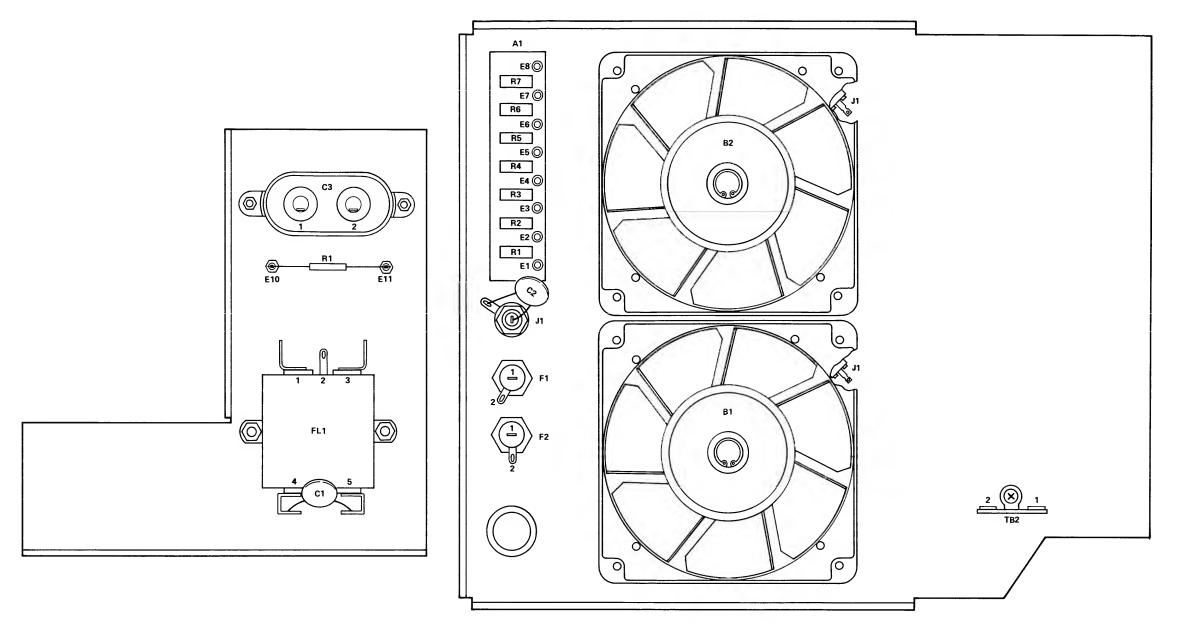
^{*} Shield is located on wiring to switch S1B.

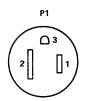




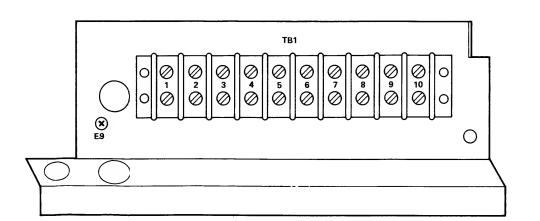
2134-4A

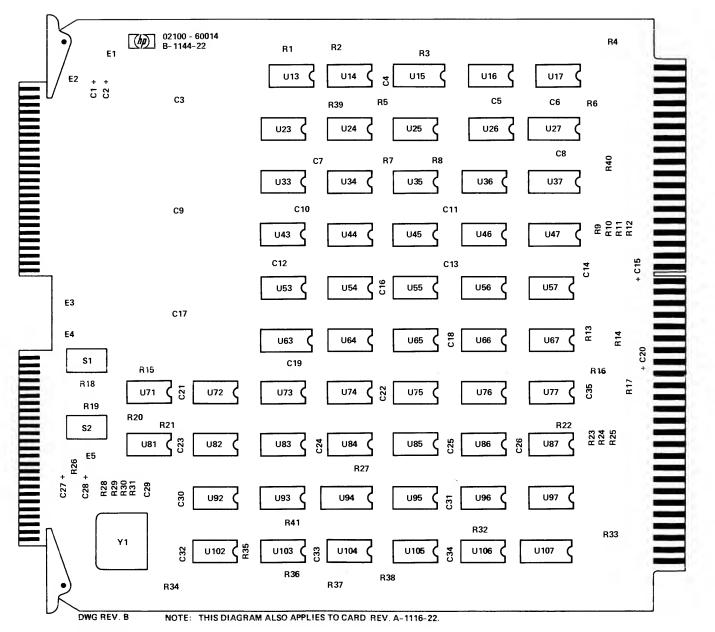
Viring List





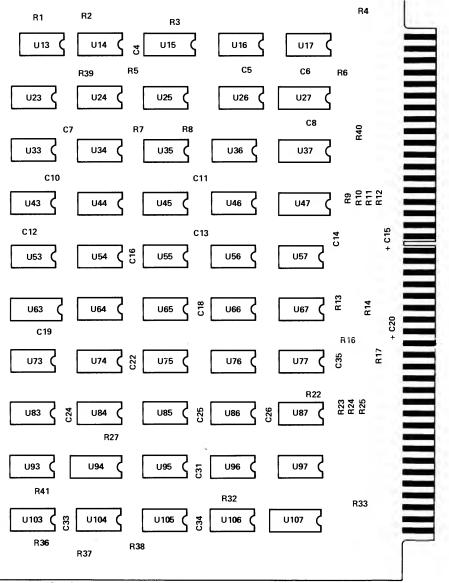
2134-4A





See table 4-3 for replaceable parts.

			PON [305 P1A [293
			EOI [42
		FF DEFINITIONS	
		11 0211111110110	
	DHLT	= DELAYED HALT	
	EPCRY	= "NOT" ENABLE P-REGISTER CARRY	
	FDIV1	= FREQUENCY DIVIDE 1	
	FDIV2	= FREQUENCY DIVIDE 2	
	PCRY	= "NOT" INCREMENT P = "NOT" P-REGISTER CARRY	INI
	PHIA	= "NOT" PHASE 1A	(203
	PH1B	= PHASE 1B	
	PH2	= PHASE 2	ста
	PH3	= PHASE 3	[31
	RH	= RUN-HALT	
	SCY	= SINGLE CYCLE	IR15 [24 3
	SG1	= STEP GENERATOR 1	
	SG2	= STEP GENERATOR 2	IMP\ 199
	SIN	= SINGLE INSTRUCTION	
			SB1
			(41:
			IR 1-
√3 1 E S 1.	RESIS CAPA	STANCE VALUES ARE IN OHMS AND CITANCE VALUES ARE IN UF UNLESS RWISE SPECIFIED.	
2.	ALL	PIN NUMBERS REFER TO 86-PIN CON- OR UNLESS OTHERWISE INDICATED.	IR 1
3.		ERALS WITHIN BRACKETS [] ARE NG LIST REFERENCE NUMBERS.	[241
4	U52, REV.	U12, U21, U22, U31, U32, U41, U42, U51, U61, AND U62 ARE NOT ON CARD 1116. THESE AVILLIARY ROM CIRCUITS BE AVAILABLE AS A FUTURE OPTION.	IR 1 [2 4 0
5.		ECTION IS TO J1-38 ON CARD REV.	IR1
6.	CONN 1116.	IECTION IS TO J1-40 ON CARD REV.	1239



RAM ALSO APPLIES TO CARD REV. A-1116-22.

FF DEFINITIONS

TIMING AND CONTROL CARD (02100-60014, REV. 1116, 1144)

DHLT = DELAYED HALT

EPCRY = "NOT" ENABLE P-REGISTER CARRY

FDIV1 = FREQUENCY DIVIDE 1

FDIV2 = FREQUENCY DIVIDE 2

INCP = "NOT" INCREMENT P

PCRY = "NOT" P-REGISTER CARRY

PH1A = "NOT" PHASE 1A

H1B = PHASE 1B

PH2 = PHASE 2

PH3 = PHASE 3

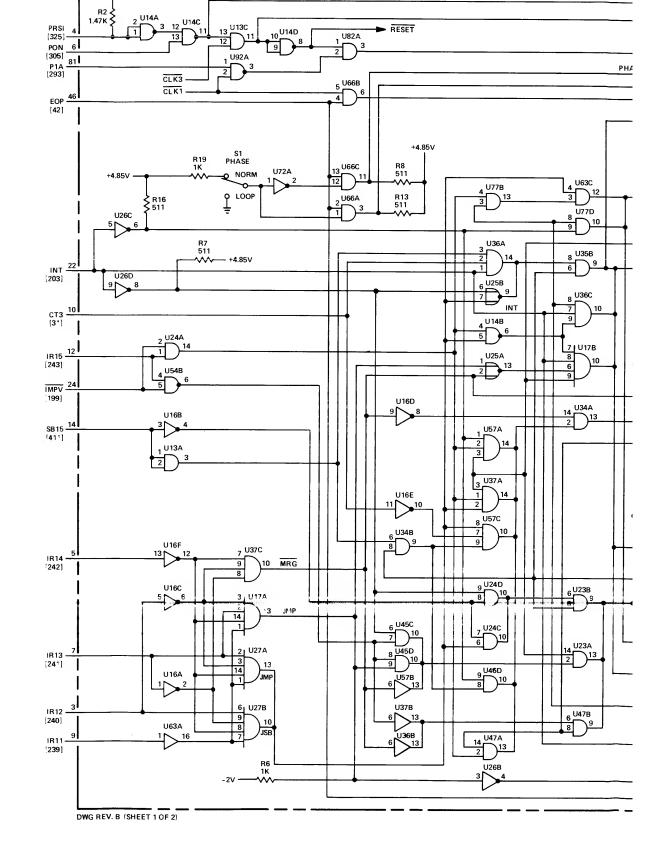
RH = RUN-HALT

SCY = SINGLE CYCLE

SG1 = STEP GENERATOR 1

= STEP GENERATOR 2

= SINGLE INSTRUCTION



CTES

RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.

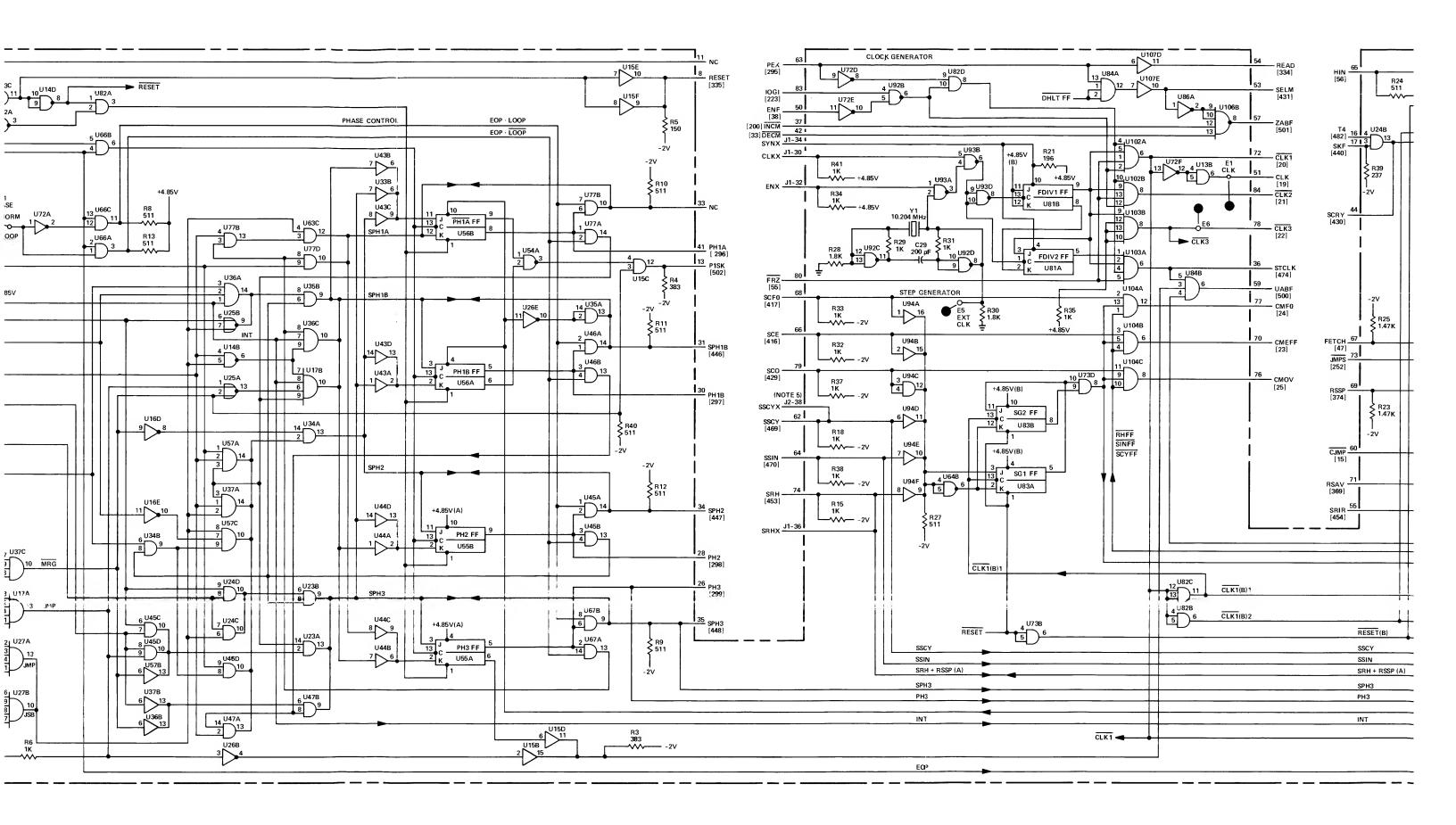
 ALL PIN NUMBERS REFER TO 86-PIN CON-NECTOR UNLESS OTHERWISE INDICATED.

3. NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.

4 U11, U12, U21, U22, U31, U32, U41, U42, U51, U52, U61, AND U62 ARE NOT ON CARD REV. 1116. THESE AUXILIARY ROM CIRCUITS WILL BE AVAILABLE AS A FUTURE OPTION.

 CONNECTION IS TO J1-38 ON CARD REV. 1116.

 CONNECTION IS TO J1-40 ON CARD REV. 1116.



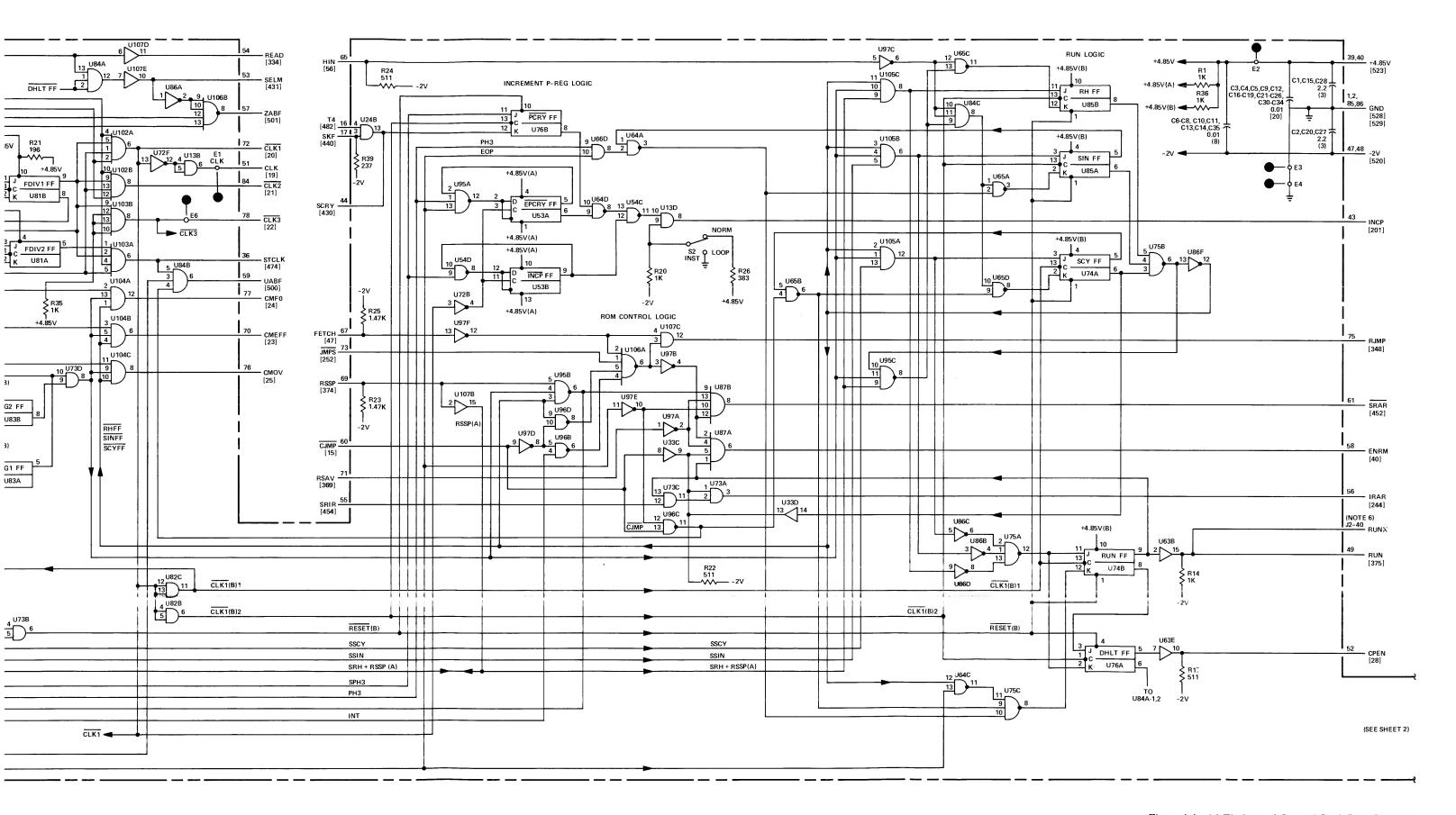


Figure 4-4. A1 Timing and Control Card, Parts Location and Schematic Diagrams (Sheet 1 of 2)



4-1. INTRODUCTION.

4-2. This section contains replaceable parts lists, parts location diagrams, and schematic diagrams for the printed circuit cards in the computer. The section also contains additional illustrations and listings which are intended to help locate parts and facilitate using the diagrams.

4-3. ABBREVIATIONS AND MNEMONICS.

4-4. Abbreviations of signal names (mnemonics) used in this manual are defined in table 4-1, together with a reference number (see paragraph 4-19) if the signal appears at the 86-pin backplane connector. Signals that appear at the front edge 48- or 50-pin connector of the card do not include a reference number.

4-5. ASSEMBLY LOCATIONS.

4-6. Figure 4-1 shows the location of the major assemblies of the computer, including optional controller panel card A24 and direct memory access card A9. I/O terminator card A16 is shown installed in slot 16 and must be removed when the eighth I/O card is installed in the I/O section. The memory section loading reflects 32K memory size. Refer to table 4-2 and figure 4-2 for other memory size loading configurations.

Note: The card cage and the extractor handles on the cards are color coded. This is intended to prevent accidental installation of a card into a slot not intended for that card. (Installing a card in a wrong slot can result in damage to the computer.)

4-7. CARD CONNECTORS.

4-8. Figure 4-3 identifies the connector pin numbers of the two types of printed circuit cards used in the computer card cage. Pin numbers for the 86-pin connector on the operator and controller panel cards are the same as for the 86-pin connector of the cards shown in figure 4-3, i.e. pin number one is to the left on the component side. The 86-pin connectors of the cards for the card cage are notched so that they cannot be plugged in backwards. This will not prevent plugging cards in the wrong slot, however, so be sure that cards are in the correct slot before inserting them.

4-9. REPLACEABLE PARTS LISTS.

4-10. Tables 4-3 through 4-21 are the replaceable parts lists for the printed circuit cards used in the card cage and

on the front panel and are included in this manual to supplement the parts location and schematic diagrams. The Illustrated Parts Breakdown (IPB) Manual provides a complete list of replaceable parts for the computer, descriptions of the table columns, and parts ordering information.

- 4-11. Parts are listed by complete reference designation and include an HP part number, quantity per card, description, manufacturer's code, and manufacturer's part number. The total quantity of a part used on the card is listed with the first entry for that part number.
- 4-12. Replaceable parts are tabulated only once for each type of card even though that type may be used in more than one slot. The table of replaceable parts is located near the diagram for the lowest numbered slot in which the card is used. For example, an X-Y driver/switch card is used in slots 101, 104, 109, and 112 Table 4-15 applies to all four cards and is located near the parts location and schematic diagrams for A101 X-Y driver/switch card. Reference to table 4-15 is included under the card parts location diagram for the four slot locations. A replaceable parts table reference is included under all card parts location diagrams.
- 4-13. Replaceable parts lists for the power supply are provided in the 02100-60053 Power Supply Operating and Service Manual, part number 5951-3038.

4-14. PARTS LOCATION AND SCHEMATIC DIAGRAMS.

- 4-15. Figures 4-4 through 4-30 are the parts location and schematic diagrams for the printed circuit cards used in the card cage and on the front panel. The illustrations are arranged in order by reference designation i.e. A1, A2, etc. The parts location diagram for each card is located adjacent to the schematic diagram and is repeated if the schematic diagram has more than one sheet. In cases where a card type is used in more than one slot, the parts location diagram is repeated but the replaceable parts list is not (see paragraph 4-12). The schematic diagrams for identical cards used in different slots are the same except for mnemonics and signals used.
- 4-16. Refer to table 4-1 for definitions of the mnemonics used on the schematic diagrams and to paragraph 4-19 for a description of the bracketed reference numbers located adjacent to the mnemonics.
- 4-17. Each card in the computer contains a revision code (see figure 4-3). The first character of the code is a letter which identifies the etched oil pattern on the card. The next four digits, referred to as a date code, identify the electrical characteristics of the card with components

mounted. The entire revision code is either stamped on the card with marking ink, or as part of the etched-foil pattern. If both a stamped and an etched code are used, the stamped revision code identifies the card with components mounted, and the etched revision code identifies the card without components.

4-18. The date code portion of the card revision code is also shown on the schematic diagram as part of the card title and part number, usually in the upper left-hand corner of the diagram. Always check the date code on both the card and the schematic diagram. If they do not agree, the schematic diagram does not apply to the card. In these cases, refer to manual supplements for applicable information.

4-19. REFERENCE NUMBERS.

4-20. Reference numbers within brackets are located on the schematic diagrams adjacent to the signal mnemonic. These numbers are intended as an aid in tracing signals between the schematic diagrams. For example, the PON signal at pin 6 near the top left of figure 4-4 has the reference number 305. The reference number list to the left of the schematic diagram shows that the signal source is pin 8 of card A7 as indicated by A7-8 and an asterisk. Locate the schematic diagram for card A7, I/O control (IOC) card. The schematic diagram for card A7 has two sheets and a check of the reference number list for sheet 1 indicates that reference number 305 is on sheet 1. This is because only the reference numbers found on sheet 1 are listed in the reference number list for sheet 1.

4-21. The reference numbers are also included in the signal index, table 4-1, and in the backplane wiring list, table 3-1. To trace a signal when only the signal mnemonic is known, first find the reference number of the signal in table 4-1. Then refer to table 3-1 to determine which schematic diagrams contain the signal. Table 4-1 is in alphabetical order of signal mnemonics and table 3-1 is in numerical order of reference numbers.

Table 4-1. Signal Index

MNEMONIC			
AAFF	SIGNAL MNEMONIC	DEFINITION	REF NO.
AAFF	AAB	Address A- or B-register	1
ABF "not" A or B Addressable FFs 3 ADR Aprand Address (S-bus field decoded) 4 ALU14 Arithmetic Logic Unit bit 10 5 ALU14 Arithmetic Logic Unit bit 15 7 ALX14 agted ALU bit 15 8 ARD A Register, bit 0 10 ARD A Register, bit 0 10 ARS "not" Arithmetic Shift (function field decoded) 11 ARSS "not" Arithmetic Shift Sign bit 12 BAFFF B-Addressable FF 13 COX Common 0, X — COY Common 0, X — COY Common 1, X — C1Y Common 1, X — C1Y Common 1, Y — C2X Common 2, X — C2Y Common 2, Y — C3X Common 3, X — C4X Common 3, X — C4X Common 4, X — C4X Common 4, X — C5Y <td></td> <td></td> <td></td>			
ADR ALU0 ALU0 ALU16 ALU14 Arithmetic Logic Unit bit 0 ALU15 ALU15 ALU15 ALX14 ALX16 ALX16 ARS ARO A-Righster, bit 0 ARS ARO A-Righster, bit 0 ARS ARSS ARSS ACAY COMMON COMMON COMMON A COY COY COX COY COX COY COMMON COMMON A COY COX COY COX COY COMMON A COY COX COMMON A COY COX COMMON A COY COX COMMON A COY COX COMMON A COY COX COMMON A COY COX COMMON A COX COY COMMON A COX COY COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COX COMMON A COX COMMON A COX COX COX COMMON A COX COX COX COX COMMON A COX COX COX COX COX COX COX COX COX COX		ì	
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ALU15 ALX14 ALX14 ALX16 gated ALU bit 15 AR0 AR0 AR0 AR85 AN0 AR85 AN01**Arithmetic Shift (function field decoded) 11 AR85 BAFF COX COY Common 0, X COY Common 1, X C1Y COMMOn 2, X C2X Common 2, X C3X Common 3, X C3Y Common 3, X C4X Common 4, X C4Y Common 5, X C6Y Common 6, X C6Y Common 6, X C6Y Common 7, X C6Y Common 6, X C6Y Common 7, X C6Y Common 7, X C6Y Common 7, X C6Y Common 7, X C6Y Common 6, X C6Y Common 7, X C6Y Common 7, X C6Y Common 1, X C6Y Common 6, X C6Y Common 6, X C6Y Common 6, X C6Y Common 6, X C6Y Common 7, X C6AV Common 7, X C6AV Common 7, X C6AV Common Anode 0, X C6AV Common Anode 0, X C6AV Common Anode 1, X C6AY Common Anode 1, X C6AY Common Anode 0, X C6AY Common Anode 0, X C6AY C6AY Common Anode 0, X C6AY C6AY Common Anode 0, X C6AY C6AY Common Anode 0, X C6AY C6AY C6AY C6AY C6AY C6AY C6AY C6AY	i e		
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C2X Common 2, X — C3X Common 3, X — C3Y Common 3, Y — C4X Common 4, X — C4Y Common 4, Y — C5X Common 5, X — C5Y Common 5, X — C6X Common 6, Y — C7X Common 7, X — C7Y Common 7, X — C7Y Common 7, X — CAOX Common Anode 0, X — CAOY Common Anode 0, Y — CA1X Common Anode 0, Y — CA1Y Common Anode 1, Y — CA2X Common Anode 2, X — CA2Y Common Anode 2, Y — CA3Y Common Anode 3, X — CA3Y Common Anode 3, X — CA4Y Common Anode 4, X — CA5X Common Anode 4, X — CA5X Common Anode 5, Y — CA6X			_
C2Y Common 2, Y — C3Y Common 3, X — C4X Common 4, X — C4Y Common 4, Y — C5X Common 5, X — C6X Common 5, Y — C6X Common 6, X — C6Y Common 6, Y — C7X Common 7, Y — C7Y Common 7, Y — CAOX Common Anode 0, X — CAOY Common Anode 0, Y — CA1X Common Anode 1, X — CA1Y Common Anode 1, X — CA2Y Common Anode 2, X — CA2Y Common Anode 3, X — CA3X Common Anode 3, X — CA3X Common Anode 4, X — CA4X Common Anode 4, X — CA4X Common Anode 4, X — CA5Y Common Anode 5, X — CA5Y Common Anode 6, X — CA6			_
C3X C3Y C0mmon 3, X C3Y C4X Common 4, X C4Y Common 5, X C5X Common 5, X C5Y Common 5, X C6Y Common 6, X C6Y Common 6, X C7X Common 7, X C7Y Common 7, X C7Y Common Anode 0, X CA1Y CA1X Common Anode 1, X CA1Y CA2X Common Anode 1, X CA2Y Common Anode 2, X CA2Y CA3X Common Anode 3, X CA3Y Common Anode 3, X CA4Y CA5X Common Anode 4, X CA4Y CA5X Common Anode 5, X CA6X CA6X Common Anode 5, X CA7Y Common Anode 6, X CA6Y Common Anode 7, X CA7Y Common Anode 7, X CA7Y Common Anode 7, X CA7Y Common Anode 6, X CA6Y COmmon Anode 6, X CA6Y Common Anode 7, X CA7Y Common Anode 6, X CA7Y Common Anode 6, X CA6Y Common Anode 6, X CA6Y Common Anode 6, X CA6Y Common Anode 7, X CA7Y Common Anode 7, X CA7Y Common Anode 7, X CA7Y Common Anode 7, X CA7Y Common Anode 7, X CA7Y Common Cathode 0, X CC1Y Common Cathode 0, X CC2Y Common Cathode 1, X CC2Y Common Cathode 1, X CC3Y Common Cathode 2, X CC3Y Common Cathode 3, X CC3Y Common Cathode 3, X CC3Y Common Cathode 3, X CC3Y Common Cathode 3, X CC3Y Common Cathode 3, X CC3Y Common Cathode 3, X CC3Y Common Cathode 3, X CC3Y Common Cathode 3, X CC3Y Common Cathode 3, X CC4Y Common Cathode 4, X CC4Y Common Cathode 3, X CC4Y Common Cathode 3, X CC4Y Common Cathode 4, X CC4Y COMMON Cathode 4, X CC4Y COMMON Cat			-
C3Y C4X C0mmon 3, Y C4Y Common 4, X C4Y Common 4, Y C5X C5X Common 5, X C6Y Common 6, Y C6X C6Y Common 6, Y C7X C0mmon 7, Y C77 C0mmon 7, Y CA0X Common 7, Y CA0X Common Anode 0, Y CA1X Common Anode 1, X CA1Y Common Anode 1, X CA1Y Common Anode 2, X CA2Y Common Anode 2, Y CA3X Common Anode 3, Y CA4X CA4Y Common Anode 4, X CA4Y Common Anode 5, Y CA5X CA5Y Common Anode 6, Y CA7X COmmon Anode 6, Y CA7X COmmon Anode 7, X CA6Y COmmon Anode 8, Y CA6Y COmmon Anode 9, Y CA1X COMMON Anode 1, X CA1Y COMMON Anode 1, X CA2Y COMMON Anode 1, X CA3Y COMMON Anode 1, X CA4Y COMMON Anode 1, X CA4Y COMMON Anode 6, Y CA5X COMMON Anode 6, Y CA6X COMMON Anode 6, X CA6Y COMMON Anode 6, Y CA7X COMMON Anode 6, Y CA7Y COMMON Anode 6, Y CA7Y COMMON Anode 7, X COMMON Anode 7, X CA7Y COMMON Anode 7, X COMMON Anode 7, X COMMON Cathode 0, Y CCCY COMMON Cathode 0, Y CCCY COMMON Cathode 1, X CCCY COMMON Cathode 1, X CCCY COMMON Cathode 1, X CCCY COMMON Cathode 1, X CCCY COMMON Cathode 2, X CCCY COMMON Cathode 3, X CCCY COMMON Cathode 3, X CCCY COMMON Cathode 3, Y CCCY COMMON Cathode 3, Y CCCY COMMON Cathode 3, Y CCCY COMMON Cathode 3, Y CCCY COMMON Cathode 4, X CCCY COMMON Cathode 3, Y CCCY COMMON Cathode 4, X			-
C4X Common 4, X — C5X Common 5, X — C6Y Common 5, Y — C6X Common 6, X — C6Y Common 6, Y — C7X Common 7, X — C7Y Common 7, Y — CA0X Common Anode 0, X — CA1X Common Anode 1, X — CA1X Common Anode 1, X — CA1Y Common Anode 1, Y — CA2X Common Anode 2, X — CA2Y Common Anode 3, X — CA3X Common Anode 3, Y — CA3Y Common Anode 4, X — CA4X Common Anode 4, Y — CA5X Common Anode 4, Y — CA5X Common Anode 6, Y — CA5Y Common Anode 6, Y — CA5Y Common Anode 6, Y — CA6X Common Anode 6, Y — CA7Y Common Anode 7, Y —			-
C4Y Common 4, Y — C5X Common 5, X — C6Y Common 6, X — C6Y Common 6, Y — C7X Common 7, X — C7Y Common 7, Y — CA0X Common Anode 0, X — CA0Y Common Anode 0, Y — CA1X Common Anode 1, X — CA1Y Common Anode 1, Y — CA2X Common Anode 2, Y — CA2Y Common Anode 2, Y — CA3X Common Anode 3, X — CA3Y Common Anode 3, X — CA4X Common Anode 3, Y — CA4X Common Anode 4, X — CA4Y Common Anode 5, Y — CA5Y Common Anode 6, X — CA5Y Common Anode 6, X — CA5Y Common Anode 6, X — CA6X Common Anode 6, X — CA6Y Common Anode 6, Y — </td <td></td> <td></td> <td> -</td>			-
C5X Common 5, X — C6X Common 6, Y — C6Y Common 6, Y — C7X Common 7, X — C7Y Common 7, Y — CA0X Common Anode 0, X — CA0Y Common Anode 0, Y — CA1X Common Anode 1, X — CA1Y Common Anode 1, Y — CA2X Common Anode 2, X — CA3X Common Anode 3, X — CA3X Common Anode 3, Y — CA4X Common Anode 4, X — CA4X Common Anode 4, X — CA4X Common Anode 4, Y — CA5X Common Anode 5, X — CA4Y Common Anode 6, Y — CA5X Common Anode 6, Y — CA6X Common Anode 6, Y — CA6X Common Anode 6, Y — CA7X Common Anode 7, X — CA7Y Common Anode 7, Y —			-
C5Y Common 5, Y — C6X Common 6, X — C6Y Common 7, X — C7X Common 7, X — C7Y Common Anode 0, X — CA0X Common Anode 0, Y — CA1X Common Anode 1, X — CA1Y Common Anode 1, Y — CA2X Common Anode 2, Y — CA3X Common Anode 2, Y — CA3X Common Anode 3, X — CA3Y Common Anode 3, Y — CA4X Common Anode 4, X — CA4X Common Anode 4, Y — CA5X Common Anode 5, X — CA5X Common Anode 5, X — CA6X Common Anode 6, Y — CA6X Common Anode 6, Y — CA6X Common Anode 6, Y — CA7X Common Anode 7, Y — CC0Y Common Cathode 0, X — CC1X Common Cathode 0, X			_
C6X Common 6, X — C7X Common 6, Y — C7Y Common 7, Y — CA0X Common Anode 0, X — CA0Y Common Anode 0, Y — CA1X Common Anode 1, X — CA1Y Common Anode 1, Y — CA2X Common Anode 2, X — CA2Y Common Anode 2, Y — CA3X Common Anode 3, X — CA3Y Common Anode 3, Y — CA4X Common Anode 4, X — CA4Y Common Anode 4, Y — CA5X Common Anode 5, X — CA5X Common Anode 5, X — CA5Y Common Anode 6, X — CA6X Common Anode 6, X — CA6Y Common Anode 6, X — CA7X Common Anode 7, Y — CA7Y Common Anode 7, Y — CC0X Common Cathode 0, X — CC1X Common Cathode 1, X			-
C6Y Common 6, Y — <			_
C7X Common 7, X — C7Y Common 7, Y — CA0X Common Anode 0, X — CA0Y Common Anode 0, Y — CA1X Common Anode 1, X — CA1Y Common Anode 1, Y — CA2X Common Anode 2, X — CA2Y Common Anode 2, Y — CA3X Common Anode 3, X — CA3Y Common Anode 3, Y — CA4X Common Anode 4, Y — CA4X Common Anode 4, Y — CA5X Common Anode 5, X — CA5Y Common Anode 5, X — CA6X Common Anode 6, Y — CA6X Common Anode 6, Y — CA7Y Common Anode 7, X — CA7Y Common Cathode 0, X — CC0X Common Cathode 0, X — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, X — CC2Y Common Catho		Common 6, X	_
C7Y Common 7, Y — CA0X Common Anode 0, X — CA1X Common Anode 1, X — CA1Y Common Anode 1, Y — CA2X Common Anode 2, X — CA2Y Common Anode 2, Y — CA3X Common Anode 3, X — CA3Y Common Anode 3, Y — CA4X Common Anode 4, X — CA4X Common Anode 4, Y — CA5X Common Anode 5, X — CA5X Common Anode 5, X — CA5Y Common Anode 6, X — CA6X Common Anode 6, X — CA6Y Common Anode 6, X — CA7X Common Anode 7, X — CA7Y Common Cathode 0, X — CC0X Common Cathode 0, X — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, X — CC2Y Common Cathode 2, X <t>— CC3X Comm</t>		Common 6, Y	-
CA0X Common Anode 0, X — CA1X Common Anode 1, X — CA1Y Common Anode 1, Y — CA2X Common Anode 2, X — CA2Y Common Anode 2, Y — CA3X Common Anode 3, X — CA3Y Common Anode 3, Y — CA4X Common Anode 4, X — CA4Y Common Anode 4, Y — CA5X Common Anode 5, X — CA5Y Common Anode 5, Y — CA6X Common Anode 6, X — CA6X Common Anode 6, Y — CA7X Common Anode 7, X — CA7Y Common Anode 7, Y — CC0X Common Cathode 0, X — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, X — CC2Y Common Cathode 2, Y — CC3X Common Cathode 3, X — CC3Y Common Cathode 4, X — CC4X		Common 7, X	_
CA0Y Common Anode 0, Y — CA1X Common Anode 1, X — CA1Y Common Anode 1, Y — CA2X Common Anode 2, X — CA2Y Common Anode 2, Y — CA3X Common Anode 3, X — CA3Y Common Anode 3, Y — CA4X Common Anode 4, X — CA4Y Common Anode 4, Y — CA5X Common Anode 5, X — CA5Y Common Anode 5, Y — CA6X Common Anode 6, Y — CA6Y Common Anode 6, Y — CA7X Common Anode 7, Y — CA7Y Common Cathode 0, X — CC0X Common Cathode 0, X — CC1X Common Cathode 0, Y — CC1X Common Cathode 1, X — CC2X Common Cathode 2, X — CC2X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X		Common 7, Y	_
CA1X Common Anode 1, X — CA2X Common Anode 2, X — CA2Y Common Anode 2, Y — CA3X Common Anode 3, X — CA3Y Common Anode 3, Y — CA4X Common Anode 4, X — CA4Y Common Anode 4, Y — CA5X Common Anode 5, X — CA5Y Common Anode 5, Y — CA6Y Common Anode 6, X — CA6Y Common Anode 7, X — CA7Y Common Anode 7, Y — CC0X Common Cathode 0, X — CC1X Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, X — CC2Y Common Cathode 2, X — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, X — CC4X Common Cathode 4, X — CC4X Common Cathode 4, X — CC4Y	CA0X	Common Anode 0, X	_
CA1Y Common Anode 1, Y — CA2X Common Anode 2, X — CA3X Common Anode 3, X — CA3Y Common Anode 3, Y — CA4X Common Anode 4, X — CA4Y Common Anode 4, Y — CA5X Common Anode 5, X — CA5Y Common Anode 5, Y — CA6X Common Anode 6, X — CA6Y Common Anode 7, X — CA7X Common Anode 7, X — CA7Y Common Cathode 0, X — CC0X Common Cathode 0, X — CC1X Common Cathode 0, Y — CC1X Common Cathode 0, Y — CC1Y Common Cathode 1, Y — CC2X Common Cathode 2, X — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, X — CC4X Common Cathode 4, X — CC4X Common Cathode 4, Y —	CA0Y	Common Anode 0, Y	_
CA2X Common Anode 2, X — CA3X Common Anode 3, X — CA3Y Common Anode 3, Y — CA4X Common Anode 4, X — CA4Y Common Anode 4, Y — CA5X Common Anode 5, X — CA5Y Common Anode 6, Y — CA6X Common Anode 6, X — CA7X Common Anode 7, X — CA7Y Common Anode 7, Y — CC0X Common Cathode 0, X — CC0Y Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1Y Common Cathode 2, X — CC2X Common Cathode 2, X — CC3X Common Cathode 3, X — CC3Y Common Cathode 4, X — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —	CA1X	Common Anode 1, X	_
CA2Y Common Anode 2, Y — CA3X Common Anode 3, X — CA4Y Common Anode 4, X — CA4Y Common Anode 5, X — CA5X Common Anode 5, Y — CA5Y Common Anode 5, Y — CA6X Common Anode 6, X — CA7X Common Anode 7, X — CA7Y Common Anode 7, X — CC0X Common Cathode 0, X — CC0Y Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, Y — CC2Y Common Cathode 2, X — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, X — CC4Y Common Cathode 4, X — CC4Y Common Cathode 4, Y —	CA1Y	Common Anode 1, Y	_
CA2Y Common Anode 2, Y — CA3X Common Anode 3, X — CA4X Common Anode 4, X — CA4X Common Anode 4, Y — CA5X Common Anode 5, X — CA5Y Common Anode 5, Y — CA6X Common Anode 6, X — CA6Y Common Anode 7, X — CA7Y Common Anode 7, X — CA7Y Common Cathode 0, X — CC0X Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, Y — CC2Y Common Cathode 2, X — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, X — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, X — CC4Y Common Cathode 4, X —	CA2X	Common Anode 2, X	_
CA3X Common Anode 3, X — CA4X Common Anode 4, X — CA4Y Common Anode 4, Y — CA5X Common Anode 5, X — CA5Y Common Anode 5, Y — CA6X Common Anode 6, Y — CA6Y Common Anode 6, Y — CA7X Common Anode 7, X — CA7Y Common Anode 7, Y — CC0X Common Cathode 0, X — CC1X Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1Y Common Cathode 2, X — CC2Y Common Cathode 2, X — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, X — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, X — CC4Y Common Cathode 4, Y —	CA2Y		_
CA3Y Common Anode 3, Y — CA4X Common Anode 4, X — CA4Y Common Anode 4, Y — CA5X Common Anode 5, X — CA5Y Common Anode 5, Y — CA6X Common Anode 6, X — CA7X Common Anode 7, X — CA7Y Common Anode 7, Y — CC0X Common Cathode 0, X — CC0Y Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, Y — CC2X Common Cathode 2, X — CC2Y Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —	CA3X	· ·	_
CA4X Common Anode 4, X — CA4Y Common Anode 4, Y — CA5X Common Anode 5, X — CA5Y Common Anode 5, Y — CA6X Common Anode 6, X — CA6Y Common Anode 6, Y — CA7X Common Anode 7, X — CA7Y Common Anode 7, Y — CC0X Common Cathode 0, X — CC0Y Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1X Common Cathode 1, Y — CC2X Common Cathode 2, X — CC2Y Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —	CA3Y	Common Anode 3, Y	_
CA4Y Common Anode 4, Y — CA5X Common Anode 5, X — CA5Y Common Anode 5, Y — CA6X Common Anode 6, X — CA6Y Common Anode 7, X — CA7X Common Anode 7, X — CA7Y Common Anode 7, Y — CC0X Common Cathode 0, X — CC0Y Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1X Common Cathode 1, Y — CC2X Common Cathode 2, X — CC2Y Common Cathode 2, Y — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —	CA4X		_
CA5X Common Anode 5, X — CA5Y Common Anode 5, Y — CA6X Common Anode 6, X — CA6Y Common Anode 6, Y — CA7X Common Anode 7, X — CA7Y Common Anode 7, Y — CC0X Common Cathode 0, X — CC0Y Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, Y — CC2X Common Cathode 2, X — CC2Y Common Cathode 2, Y — CC3X Common Cathode 3, X — CC3Y Common Cathode 4, X — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —			_
CA5Y Common Anode 5, Y — CA6X Common Anode 6, X — CA7X Common Anode 7, X — CA7Y Common Anode 7, Y — CC0X Common Cathode 0, X — CC0Y Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, Y — CC2X Common Cathode 2, X — CC2Y Common Cathode 2, Y — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —			_
CA6X Common Anode 6, X — CA6Y Common Anode 6, Y — CA7X Common Anode 7, X — CA7Y Common Anode 7, Y — CC0X Common Cathode 0, X — CC0Y Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, Y — CC2X Common Cathode 2, X — CC2Y Common Cathode 2, Y — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —			_
CA6Y Common Anode 6, Y — CA7X Common Anode 7, X — CA7Y Common Anode 7, Y — CC0X Common Cathode 0, X — CC0Y Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, Y — CC2X Common Cathode 2, X — CC2Y Common Cathode 2, Y — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —			_
CA7X Common Anode 7, X — CA7Y Common Anode 7, Y — CC0X Common Cathode 0, X — CC0Y Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, Y — CC2X Common Cathode 2, X — CC2Y Common Cathode 2, Y — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —		· ·	_
CA7Y Common Anode 7, Y — CC0X Common Cathode 0, X — CC0Y Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, Y — CC2X Common Cathode 2, X — CC2Y Common Cathode 2, Y — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —			_
CCOX Common Cathode 0, X — CCOY Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, Y — CC2X Common Cathode 2, X — CC2Y Common Cathode 2, Y — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —		·	
CCOY Common Cathode 0, Y — CC1X Common Cathode 1, X — CC1Y Common Cathode 1, Y — CC2X Common Cathode 2, X — CC2Y Common Cathode 2, Y — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —			_
CC1X Common Cathode 1, X — CC1Y Common Cathode 1, Y — CC2X Common Cathode 2, X — CC2Y Common Cathode 2, Y — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —		· ·	
CC1Y Common Cathode 1, Y — CC2X Common Cathode 2, X — CC2Y Common Cathode 2, Y — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —	1		
CC2X Common Cathode 2, X — CC2Y Common Cathode 2, Y — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —			1 -
CC2Y Common Cathode 2, Y — CC3X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —		· ·	_
CC3X Common Cathode 3, X — CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —		· ·	-
CC3Y Common Cathode 3, Y — CC4X Common Cathode 4, X — CC4Y Common Cathode 4, Y —		· ·	_
CC4X Common Cathode 4, X — — — — — — — — — — — — — — — — — —			_
CC4Y Common Cathode 4, Y		· ·	_
· ·			_
			-
CC5X Common Cathode 5, X —		I · · · · · · · · · · · · · · · · · · ·	-
CC5Y Common Cathode 5, Y –	CC5Y	Common Cathode 5, Y	_

Table 4-1. Signal Index (Continued)

SIGNAL		REF
MNEMONIC	DEFINITION	NO.
CC6X	Common Cathode 6, X	_
CC6Y	Common Cathode 6, Y	_
CC7X	Common Cathode 7, X	_
CC7Y	Common Cathode 7, Y	_
CIN	"not" Carry In	14
CJMP	"not" Conditional Jump (function field decoded)	15
CL	Constant to Left half (S-bus field decoded)	16
CLC	Clear Control (I/O)	17
CLF	Clear Flag (I/O)	18
CLK	Clock	19
CLKX	Clock, external	_
CLK1	"not" Clock 1	20
CLK2	"not" Clock 2	21
CLK3	"not" Clock 3	22
CMEFF	Complement Extend FF	23
CMFO	Complement Flag 0 (I/O)	24
CMOV	Complement Overflow	25
COND	Conditional (S-bus field decoded)	26
COND	"not" Carry Out	27
CPEN	Control Panel Enable	28
CR	Constant to Right half (S-bus field decoded)	29
	Control Reset (I/O)	30
CRS		31
CT3	Count of indirect phase 3	32
CW	Clear-Write	
DECM	"not" Decrement M-register	33
DIV	"not" Divide (function field decoded)	34
DTRY	Data Ready	35
EDT	End Data Transfer	36
EEOP	Enable End Of Phase	37
ENF	Enable Flag (I/O)	38
ENOV	Enable Overflow	39
ENRM	Enable ROM	40
ENRMX	Enable ROM, external	
ENSS	Enable Special and Skip fields	41
ENX	Enable, external	
EOP	End Of Phase (skip field decoded)	42
EPRSI	External Preset Indicator	43
EREQ1	Enable Request 1	-
EREQ2	Enable Request 2	_
EXTEND	Extend	44
FBFF6	Flag Buffer FF s.c. 6	45
FBFF7	Flag Buffer FF s.c. 7	46
FETCH	Fetch	47
FLAG	Flag (CPU)	48
FLG1	Flag bit 1 (I/O)	49
FLG2	Flag bit 2 (I/O)	50
FLG2X	Flag bit 2, external	_
FLG3	Flag bit 3, external	_
FLG4	Flag bit 4, external	_
FLG5	Flag bit 5, external	-
FLG6	Flag bit 6, external	_
FN0	Function Number 0	51
FN1	Function Number 1	52
FN2	Function Number 2	53
FN3	Function Number 3	54
FRZ	"not" Freeze	55
HIN	Halt Instruction (I-register decoded)	56
THIN	Trait matraction (1-register decoded)	

Table 4-1. Signal Index (Continued)

Table 4-1. Signal Index (Continued)				
SIGNAL MNEMONIC	DEFINITION	REF NO.		
HT6	Hold time T6	57		
ĪĀŪ	"not" Interrupt Address, bit 0	"-		
ĪA1	"not" Interrupt Address, bit 1	_		
ĪĀ2	"not" Interrupt Address, bit 2	_		
ĪA3	"not" Interrupt Address, bit 3	_		
ĪA4	"not" Interrupt Address, bit 4	_		
ĪĀ5	"not" Interrupt Address, bit 5			
IAK	Interrupt Acknowledge	58		
IDC0	Inhibit Driver Collector, bit 0	_		
IDC1	Inhibit Driver Collector, bit 1	_		
IDC2	Inhibit Driver Collector, bit 2	_		
IDC3	Inhibit Driver Collector, bit 3	_		
IDC4	Inhibit Driver Collector, bit 4	_		
IDC5	Inhibit Driver Collector, bit 5	_		
IDC6	Inhibit Driver Collector, bit 6	_		
IDC7	Inhibit Driver Collector, bit 7	_		
IDC8	Inhibit Driver Collector, bit 8			
IDC9	Inhibit Driver Collector, bit 9			
IDC10	Inhibit Driver Collector, bit 10			
IDC11	Inhibit Driver Collector, bit 11			
IDC12	Inhibit Driver Collector, bit 12			
IDC13	Inhibit Driver Collector, bit 13	_		
IDC14	Inhibit Driver Collector, bit 14	_		
IDC15	Inhibit Driver Collector, bit 15	_		
IDC16	Inhibit Driver Collector, bit 16	_		
IDEM0-3	Inhibit Driver Conlector, bit 16 Inhibit Driver Enable Modules 0 thru 3			
IDEM0-3X	Inhibit Driver Enable Modules 0 thru 3, external	59		
IDEM4-7	Inhibit Driver Enable Modules 4 thru 7	60		
IDEM4-7X	Inhibit Driver Enable Modules 4 thru 7, external			
IDOMO	Inhibit Driver, bit 0, Module 0	61		
IDOM1	Inhibit Driver, bit 0, Module 1	78		
ID0M2	Inhibit Driver, bit 0, Module 2	95		
ID0M3	Inhibit Driver, bit 0, Module 3	112		
IDOM4	Inhibit Driver, bit 0, Module 4	129		
ID0M5	Inhibit Driver, bit 0, Module 5	146		
ID0M6	Inhibit Driver, bit 0, Module 6	163		
ID0M7	Inhibit Driver, bit 0, Module 7	180		
ID1M0	Inhibit Driver, bit 1, Module 0	62		
ID1M1	Inhibit Driver, bit 1, Module 1	79		
ID1M2	Inhibit Driver, bit 1, Module 2	96		
ID1M3	Inhibit Driver, bit 1, Module 3	113		
ID1M4	Inhibit Driver, bit 1, Module 4	130		
ID1M5	Inhibit Driver, bit 1, Module 5	147		
ID1M6	Inhibit Driver, bit 1, Module 6	164		
ID1M7	Inhibit Driver, bit 1, Module 7	181		
ID2M0	Inhibit Driver, bit 2, Module 0	63		
ID2M1	Inhibit Driver, bit 2, Module 1	80		
ID2M2	Inhibit Driver, bit 2, Module 2	97		
ID2M3	Inhibit Driver, bit 2, Module 3	114		
ID2M4	Inhibit Driver, bit 2, Module 4	131		
ID2M5	Inhibit Driver, bit 2, Module 5	148		
ID2M6	Inhibit Driver, bit 2, Module 6	165		
ID2M7	Inhibit Driver, bit 2, Module 7	182		
ID3M0	Inhibit Driver, bit 3, Module 0	64		
ID3M1	Inhibit Driver, bit 3, Module 1	81		
ID3M2	Inhibit Driver, bit 3, Module 2	98		
ID3M3	Inhibit Driver, bit 3, Module 3	115		
	. ,			

Table 4-1. Signal Index (Continued)

Table 4-1. Signal fridex (Continued)				
SIGNAL MNEMONIC	DEFINITION	REF NO.		
ID3M4	Inhibit Driver, bit 3, Module 4	132		
ID3M4	Inhibit Driver, bit 3, Module 5	149		
ID3M6	Inhibit Driver, bit 3, Module 6	166		
1	Inhibit Driver, bit 3, Module 7	183		
ID3M7	Inhibit Driver, bit 4, Module 0	65		
ID4M0	Inhibit Driver, bit 4, Module 1	82		
ID4M1	Inhibit Driver, bit 4, Module 7	99		
ID4M2	Inhibit Driver, bit 4, Module 2	116		
ID4M3	Inhibit Driver, bit 4, Module 3 Inhibit Driver, bit 4, Module 4	133		
ID4M4		150		
ID4M5	Inhibit Driver, bit 4, Module 5	167		
ID4M6	Inhibit Driver, bit 4, Module 6	184		
ID4M7	Inhibit Driver, bit 4, Module 7	66		
ID5M0	Inhibit Driver, bit 5, Module 0	83		
ID5M1	Inhibit Driver, bit 5, Module 1	100		
ID5M2	Inhibit Driver, bit 5, Module 2	117		
ID5M3	Inhibit Driver, bit 5, Module 3			
ID5M4	Inhibit Driver, bit 5, Module 4	134		
ID5M5	Inhibit Driver, bit 5, Module 5	151		
ID5M6	Inhibit Driver, bit 5, Module 6	168		
ID5M7	Inhibit Driver, bit 5, Module 7	185		
ID6M0	Inhibit Driver, bit 6, Module 0	67		
ID6M1	Inhibit Driver, bit 6, Module 1	84		
ID6M2	Inhibit Driver, bit 6, Module 2	101		
ID6M3	Inhibit Driver, bit 6, Module 3	118		
ID6M4	Inhibit Driver, bit 6, Module 4	135		
ID6M5	Inhibit Driver, bit 6, Module 5	152		
ID6M6	Inhibit Driver, bit 6, Module 6	169		
ID6M7	Inhibit Driver, bit 6, Module 7	186		
ID7M0	Inhibit Driver, bit 7, Module 0	68		
ID7M1	Inhibit Driver, bit 7, Module 1	85		
ID7M2	Inhibit Driver, bit 7, Module 2	102		
ID7M3	Inhibit Driver, bit 7, Module 3	119		
ID7M4	Inhibit Driver, bit 7, Module 4	136		
ID7M5	Inhibit Driver, bit 7, Module 5	153		
ID7M6	Inhibit Driver, bit 7, Module 6	170		
ID7M7	Inhibit Driver, bit 7, Module 7	187		
ID8M0	Inhibit Driver, bit 8, Module 0	69		
ID8M1	Inhibit Driver, bit 8, Module 1	86		
ID8M2	Inhibit Driver, bit 8, Module 2	103		
ID8M3	Inhibit Driver, bit 8, Module 3	120		
ID8M4	Inhibit Driver, bit 8, Module 4	137		
ID8M5	Inhibit Driver, bit 8, Module 5	154		
ID8M6	Inhibit Driver, bit 8, Module 6	171		
ID8M7	Inhibit Driver, bit 8, Module 7	188		
3	Inhibit Driver, bit 9, Module 0	70		
ID9M0	Inhibit Driver, bit 9, Module 1	87		
ID9M1	Inhibit Driver, bit 9, Module 2	104		
ID9M2	Inhibit Driver, bit 9, Module 3	121		
ID9M3	Inhibit Driver, bit 9, Module 3	138		
ID9M4		155		
ID9M5	Inhibit Driver, bit 9, Module 5	172		
ID9M6	Inhibit Driver, bit 9, Module 6	189		
ID9M7	Inhibit Driver, bit 9, Module 7	71		
ID10M0	Inhibit Driver, bit 10, Module 0	88		
ID10M1	Inhibit Driver, bit 10, Module 1	105		
ID10M2	Inhibit Driver, bit 10, Module 2	122		
ID10M3	Inhibit Driver, bit 10, Module 3	139		
ID10M4	Inhibit Driver, bit 10, Module 4	138		

Table 4-1. Signal Index (Continued)

SIGNAL MNEMONIC	DEFINITION	REF NO.			
ID10M5	Inhibit Driver, bit 10, Module 5	156			
ID10M6	Inhibit Driver, bit 10, Module 6	173			
ID10M7	Inhibit Driver, bit 10, Module 7	190			
ID11M0	Inhibit Driver, bit 11, Module 0	72			
ID11M1	Inhibit Driver, bit 11, Module 1	89			
ID11M2	Inhibit Driver, bit 11, Module 2	106			
ID11M3	Inhibit Driver, bit 11, Module 3	123			
ID11M4	Inhibit Driver, bit 11, Module 4	140			
ID11M5	Inhibit Driver, bit 11, Module 5	157			
ID11M6	Inhibit Driver, bit 11, Module 6	174			
ID11M7	Inhibit Driver, bit 11, Module 7	191			
ID12M0	Inhibit Driver, bit 12, Module 0	73			
ID12M1	Inhibit Driver, bit 12, Module 1	90			
ID12M2	Inhibit Driver, bit 12, Module 2	107			
ID12M3	Inhibit Driver, bit 12, Module 3	124			
ID12M4	Inhibit Driver, bit 12, Module 4	141			
ID12M5	Inhibit Driver, bit 12, Module 5	158			
ID12M6	Inhibit Driver, bit 12, Module 6	175			
ID12M7	Inhibit Driver, bit 12, Module 7	192			
ID13M0	Inhibit Driver, bit 13, Module 0	74			
ID13M1	Inhibit Driver, bit 13, Module 1	91			
ID13M2	Inhibit Driver, bit 13, Module 2	108			
ID13M3	Inhibit Driver, bit 13, Module 3	125			
ID13M4	Inhibit Driver, bit 13, Module 4	142			
ID13M5	Inhibit Driver, bit 13, Module 5	159			
ID13M6	Inhibit Driver, bit 13, Module 6	176			
ID13M7	Inhibit Driver, bit 13, Module 7	193			
ID14M0	Inhibit Driver, bit 14, Module 0	75			
ID14M1	Inhibit Driver, bit 14, Module 1	92			
ID14M2	Inhibit Driver, bit 14, Module 2	109			
ID14M3	Inhibit Driver, bit 14, Module 3	126			
ID14M4	Inhibit Driver, bit 14, Module 4	143			
ID14M5	Inhibit Driver, bit 14, Module 5	160			
ID14M6	Inhibit Driver, bit 14, Module 6	177			
ID14M7	Inhibit Driver, bit 14, Module 7	194			
ID15M0	Inhibit Driver, bit 15, Module 0	76			
ID15M1	Inhibit Driver, bit 15, Module 1	93			
ID15M2	Inhibit Driver, bit 15, Module 2	110			
ID15M3	Inhibit Driver, bit 15, Module 3	127			
ID15M4	Inhibit Driver, bit 15, Module 4	144			
- ID15M5	Inhibit Driver, bit 15, Module 5	161			
ID15M6	Inhibit Driver, bit 15, Module 6	178			
ID15M7	Inhibit Driver, bit 15, Module 7	195			
ID16M0	Inhibit Driver, bit 16, Module 0	77			
ID16M1	Inhibit Driver, bit 16, Module 1	94			
ID16M2	Inhibit Driver, bit 16, Module 2	111			
ID16M3	Inhibit Driver, bit 16, Module 3	128			
ID16M4	Inhibit Driver, bit 16, Module 4	145			
ID16M5	Inhibit Driver, bit 16, Module 5	162			
ID16M6	Inhibit Driver, bit 16, Module 6	179			
ID16M7	Inhibit Driver, bit 16, Module 7	196			
IEN5	Interrupt Enable s.c. 5	198			
IEN10	Interrupt Enable s.c. 10	496			
IEN20	Interrupt Enable s.c. 20	497			
IMPV	"not" Interrupt due to Memory Protect Violation	199			
INCM	"not" Increment M-register	200			
INCP	Increment P-register	201			

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Table 4-1. Dignat fruex (Convinced)					
SIGNAL MNEMONIC	DEFINITION	REF NO.			
INM	Index Mode	202			
INT	Interrupt	203			
INTX	"not" Interrupt, external	_			
INT5	Interrupt from s.c. 5	204			
IOB0	Input/Output Bus bit 0	205			
IOB1	Input/Output Bus bit 1	206			
IOB1	Input/Output Bus bit 2	207			
IOB2	Input/Output Bus bit 3	208			
IOB3	Input/Output Bus bit 4	209			
IOB4	Input/Output Bus bit 5	210			
	Input/Output Bus bit 6	211			
IOB6	Input/Output Bus bit 7	212			
IOB7		213			
IOB8	Input/Output Bus bit 8	213			
IOB9	Input/Output Bus bit 9	215			
IOB10	Input/Output Bus bit 10				
IOB11	Input/Output Bus bit 11	216			
IOB12	Input/Output Bus bit 12	217			
IOB13	Input/Output Bus bit 13	218			
IOB14	Input/Output Bus bit 14	219			
IOB15	Input/Output Bus bit 15	220 221			
IOBI 16	Input/Output Bus Input bit 16	221			
IOG IOG1	Input/Output Group Input/Output Group (special field decoded)	223			
IOGE	Input/Output Group (special field decoded)	224			
IOI	Input/Output group Input	225			
100	Input/Output group Output	226			
IPU	Internal Power Up	535			
IR0	I-Register bit 0	228			
IR1	I-Register bit 1	229			
IR2	I-Register bit 2	230			
IR3	I-Register bit 3	231			
IR4	I-Register bit 4	232			
IR5	I-Register bit 5	233			
IR6	I-Register bit 6	234			
IR7	I-Register bit 7	235			
IR8	I-Register bit 8	236			
IR9	I-Register bit 9	237			
IR10	I-Register bit 10	238			
IR11	I-Register bit 11	239			
IR12	I-Register bit 12	240			
IR13	I-Register bit 13	241			
IR14	I-Register bit 14	242			
IR15	I-Register bit 15	243			
IRAR	Increment ROM Address Register	244			
IRQ1	Interrupt Request 1	245			
IRQ1X	Interrupt Request 1, external				
		246			
IRQ2	Interrupt Request 2 Interrupt Request 2, external	240			
IRQ2X		247			
IRQ3	Interrupt Request 3	247			
IRQ3X	Interrupt Request 3, external	740			
IRQ4	Interrupt Request 4	248			
IRQ4X	Interrupt Request 4, external	_			
IRQ5	Interrupt Request 5	249			
IRQ5X	Interrupt Request 5, external				
IRQ6	Interrupt Request 6	250			
IRQ6X	Interrupt Request 6, external	-			
IRQ7	Interrupt Request 7	251			
JMPS	"not" Jump (skip field decoded)	252			

Table 4-1. Signal Index (Continued)

	1	
SIGNAL MNEMONIC	DEFINITION	REF NO.
JMPF	"not" Jump (function field decoded)	253
JSB	"not" Jump to Subroutine (function field decoded)	254
LOAD	Load Memory	495
LPE	Loader Protect Enable	256
LSI	Left Shift Input	257
MBSY	Memory Busy	258
MC MC	Mode Control	259
MIT	Memory Inhibit Time	259
MOD0	Module 0	260
MOD0, 4	Modules 0 and 4	200
MOD1	Module 1	261
MOD1 MOD1, 5	Modules 1 and 5	201
MOD2	Module 2	
MOD2 MOD2,6	Modules 2 and 6	262
MOD2,0 MOD3	Module 3	202
MOD3 MOD3, 7		263
•	Modules 3 and 7	_
MOD5	Module 4	264
MOD5	Module 5	265
MOD6	Module 6	266
MOD7	Module 7	267
MOD0/1	"not" Modules 0 and 1	268
MOD2/3	"not" Modules 2 and 3	269
MOD4/5	"not" Modules 4 and 5	270
MOD6/7	"not" Modules 6 and 7	271
MOD0T/2T	Module 0/2 Time	272
MPC	Memory Protect Control	274
MPV	"not" Memory Protect Violation	275
MPY	"not" Multiply	276
MR0	M-Register bit 0	277
MR1	M-Register bit 1	278
MR2	M-Register bit 2	279
MR3	M-Register bit 3	280
MR4	M-Register bit 4	281
MR5	M-Register bit 5	282
MR6	M-Register bit 6	283
MR7	M-Register bit 7	284
MR8	M-Register bit 8	285
MR9	M-Register bit 9	286
MR10	M-Register bit 10	287
MR11	M-Register bit 11	288
MRTY	Memory Read Time Y	289
MSG	Memory Sense Gate	290
MWTY	Memory Write Time Y	291
OVFF	Overflow FF	292
P1A	Phase 1A (function field decoded)	293
P1SK	Phase 1 Skip	502
PEH	Parity Error Halt (indicator)	294
PEX	Parity Error	295
PH1A	Phase 1A	296
PH1B	Phase 1B	296
PH2	Phase 2	
PH2 PH3		298
	Phase 3	299
PH5	Phase 5	300
PINH	Panel Inhibit	301
PNLA	Panel Select A-register	302
PNLB	Panel Select B-register	303
PNLP	Panel Select P-register	304

Table 4-1. Signal Index (Continued)

	Table 4-1. Signal Index (Continued)					
SIGNAL MNEMONIC	DEFINITION	REF NO.				
PNLT	Panel select T-register	499				
PON	Power On Normal	305				
POPIO	Power On Preset I/O	306				
PRH5/PRL4	Priority High s.c. 5, Priority Low s.c. 4	309				
PRH6/PRL5	Priority High s.c. 6, Priority Low s.c. 5	310				
1	Priority High s.c. 11, Priority Low s.c. 10	311				
PRH11/PRL10	Priority High s.c. 12, Priority Low s.c. 11	312				
PRH12/PRL11	, , ,	313				
PRH13/PRL12	Priority High s.c. 13, Priority Low s.c. 12 Priority High s.c. 14, Priority Low s.c. 13	314				
PRH14/PRL13		315				
PRH15/PRL14	Priority High s.c. 15, Priority Low s.c. 14	316				
PRH16/PRL15	Priority High s.c. 16, Priority Low s.c. 15	317				
PRH17/PRL16	Priority High s.c. 17, Priority Low s.c. 16					
PRH21/PRL20	Priority High s.c. 21, Priority Low s.c. 20	318				
PRH22/PRL21	Priority High s.c. 22, Priority Low s.c. 21	319				
PRH23/PRL22	Priority High s.c. 23, Priority Low s.c. 22	320				
PRH24/PRL23	Priority High s.c. 24, Priority Low s.c. 23	321				
PRH25/PRL24	Priority High s.c. 25, Priority Low s.c. 24	322				
PRL17	Priority Low s.c. 17	323				
PRSE	Preset External	324				
PRSI	Preset Internal	325				
PWU	Power Up	326				
PWUX	Power Up, external	i - 1				
QSI	Q-register Shift Input	327				
RA0	ROM Address bit 0	-				
RA1	ROM Address bit 1	_				
RA2	ROM Address bit 2	_				
RA3	ROM Address bit 3	_				
RA4	ROM Address bit 4	_ [
RA5	ROM Address bit 5	_				
RA6	ROM Address bit 6	_				
RA7	ROM Address bit 7	_				
RA8	ROM Address bit 8	_				
RA9	ROM Address bit 9	_				
RARO	ROM Address Register bit 0					
RAR1	ROM Address Register bit 1	_				
RAR2	ROM Address Register bit 2	_				
l e	ROM Address Register bit 2	_				
RAR3	•	_				
RAR4	ROM Address Register bit 4 ROM Address Register bit 5	_				
RAR5	ROM Address Register bit 6	_				
RAR6						
RAR7	ROM Address Register bit 7 ROM Address Register bit 8					
RAR8	•	_				
RAR9	ROM Address Register bit 9 R-Bus bit 15	328				
RB15		329				
RBE	"not" R-bus Enable	330				
RBS1	R-Bus Select 1	330				
RBS1X	R-Bus Select 1, external	331				
RBS2	R-Bus Select 2	ا عا				
RBS2X	R-Bus Select 2, external					
RCIR	Read Central Interrupt Register	332				
RCTR	Read Counter	333				
READ	Read	334				
RESET	system Reset	335				
RFE	Rotate Flag and Extend bits (CPU)	336				
RIOB	Read I/O Bus	337				
RIRO	ROM Instruction Register bit 0	338				
RIR1	ROM Instruction Register bit 1	339				

Table 4-1. Signal Index (Continued)

Table 4-1. Signal Index (Continued)					
SIGNAL MNEMONIC	DEFINITION	-	REF NO.		
RIR2	ROM Instruction Register bit 2		340		
RIR3	ROM Instruction Register bit 3	ŀ	341		
RIR4	ROM Instruction Register bit 4		342		
RIR5	ROM Instruction Register bit 5	-	343		
RIR6	ROM Instruction Register bit 6		344		
RIR7	ROM Instruction Register bit 7	-	345		
RIR12	ROM Instruction Register bit 12		346		
RIR17	ROM Instruction Register bit 17	:	347		
RJMP	ROM Jump		348		
RMX	ROM Samp		346		
ROM8	ROM External	ŀ	240		
ROM9		ŀ	349		
	ROM bit 9		350		
ROM10	ROM bit 10		351		
ROM11	ROM bit 11	ļ	352		
ROM12	ROM bit 12	į	353		
ROM13	ROM bit 13		354		
ROM14	ROM bit 14	-	355		
ROM15	ROM bit 15		356		
ROM16	ROM bit 16		357		
ROM17	ROM bit 17	ľ	358		
ROM18	ROM bit 18	[359		
ROM19	ROM bit 19	į	360		
ROM20	ROM bit 20		361		
ROM21	ROM bit 21		362		
ROM22	ROM bit 22		363		
ROM23	ROM bit 23		364		
ROMX0	ROM bit 0, external		_		
ROMX1	ROM bit 1, external		_		
ROMX2	ROM bit 2, external		_		
ROMX3	ROM bit 3, external		_		
ROMX4	ROM bit 4, external		_		
ROMX5	ROM bit 5, external	-	_		
ROMX6	ROM bit 6, external		_		
ROMX7	ROM bit 7, external		_		
ROMX8	ROM bit 8, external		_		
ROMX9	ROM bit 9, external				
ROMX10	ROM bit 10, external		<u>_</u>		
ROMX11	ROM bit 11, external	•			
ROMX11	ROM bit 12, external	i	_		
ROMX13	ROM bit 12, external		_		
ROMX14	ROM bit 14, external	-	_		
ROMX15	ROM bit 15, external				
ROMX16	ROM bit 16, external	-			
ROMX10	ROM bit 17, external		<u>-</u>		
ROMX17	ROM bit 18, external	-	_		
ROMX19	ROM bit 19, external		_		
ROMX19	ROM bit 19, external	11	_		
ROMX20	· · · · · · · · · · · · · · · · · · ·	171	_		
	ROM bit 21, external	4.	_		
ROMX22	ROM bit 22, external	-	-		
ROMX23	ROM bit 23, external		-		
RP9	Read P-register bit 9		365		
RPHI	Read P-register High bits (10 through 15)	0	366		
RPLO	Read P-register Low bits (0 through 9)		367		
RRSB	Read R-bus to S-bus		368		
RRSBX	Read R-bus to S-bus, external		_		
RSAV	Read Save-Register	-	369		
RSP1	Read SP1-register	100	370		

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		DEE
SIGNAL		REF
MNEMONIC	DEFINITION	NO.
RSP1X	Read SP1-register, external	271
RSP2	Read SP2-register	371
RSP2X	Read SP2-register, external	
RSP3	Read SP3-register	372
RSP3X	Read SP3-register, external	_
RSP4	Read SP4-register	373
RSP4X	Read SP4-register, external	-
RSSP	Restart Pulse	374
RUN	Run signal	375
RUNX	Run signal, external	
RW	Read-Write	376
RWCW	Read-Write/Clear-Write	377
SA0	Sense Amplifier bit 0	378
SA1	Sense Amplifier bit 1	379
SA2	Sense Amplifier bit 2	380
SA3	Sense Amplifier bit 3	381
SA4	Sense Amplifier bit 4	382
SA5	Sense Amplifier bit 5	383
SA6	Sense Amplifier bit 6	384
SA7	Sense Amplifier bit 7	385
SA8	Sense Amplifier bit 8	386
SA9	Sense Amplifier bit 9	387
SA10	Sense Amplifier bit 10	388
SA11	Sense Amplifier bit 11	389
SA12	Sense Amplifier bit 12	390
SA13	Sense Amplifier bit 13	391
SA14	Sense Amplifier bit 14	392
SA15	Sense Amplifier bit 15	393
SA16	Sense Amplifier bit 16	394
SAM	Select A-register Mode	395
SBO	S-Bus bit 0	396
SB1	S-Bus bit 1	397
SB2	S-Bus bit 2	398
SB3	S-Bus bit 3	399
SB4	S-Bus bit 4	400
SB5	S-Bus bit 5	401
SB6	S-Bus bit 6	402
SB7	S-Bus bit 7	403
SB8	S-Bus bit 8	404
SB9	S-Bus bit 9	405
SB10	S-Bus bit 10	406
SB11	S-Bus bit 11	407
SB12	S-Bus bit 12	408
SB13	S-Bus bit 13	409
SB14	S-Bus bit 14	410
SB15	S-Bus bit 15	411
SC1	Select Code 1	412
SC5	Select Code 5	413
SC6	Select Code 6	414
SC7	Select Code 7	415
SCE	Set/Clear Extend	416
SCF0	Set/Clear Flag Zero	417
	Select Code Least significant bit 0	418
SCL0	Select Code Least significant bit 0 Select Code Least significant bit 0, external	_
SCL0X	"not" Select Code Least significant bit 0, external	1 _
SCL0X	Select Code Least significant bit 0, external	419
SCL1	Select Code Least significant bit 1 Select Code Least significant bit 1, external	1 -
SCL1X	Select Code Least significant bit 1, external	

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	Ţ	
SIGNAL MNEMONIC	DEFINITION	REF NO.
SCL1X	"not" Select Code Least significant bit 1, external	_
SCL2	Select Code Least significant bit 2	420
SCL2X	Select Code Least significant bit 2, external	_
SCL2X	"not" Select Code Least significant bit 2, external	_
SCL3	Select Code Least significant bit 3	421
SCL3X	Select Code Least significant bit 3, external	-
SCL3X	"not" Select Code Least significant bit 3, external	_
SCL4	Select Code Least significant bit 4	422
SCL4X	Select Code Least significant bit 4, external	_
SCL4X	"not" Select Code Least significant bit 4, external	_
SCL5	Select Code Least significant bit 5	423
SCL5X	Select Code Least significant bit 5, external	_
SCL5X	"not" Select Code Least significant bit 5, external	_
SCL6	Select Code Least significant bit 6	424
SCL6X	Select Code Least significant bit 6, external	_
SCL6X	"not" Select Code Least significiant bit 6, external	_
SCL7	Select Code Least significant bit 7	425
SCL7X	Select Code Least significant bit 7, external	-
SCL7X	"not" Select Code Least significant bit 7, external	_
SCMO	Select Code Most significant bit 0	426
SCMOX	"not" Select Code Most significant bit 0, external	420 —
SCM1	Select Code Most significant bit 1	427
SCM1X	"not" Select Code Most significant bit 1, external	427
SCM2	Select Code Most significant bit 2	_ 428
SCM2X	Select Code Most significant bit 2, external	420
SCM2X	"not" Select Code Most significant bit 2, external	_
SCM3	Select Code Most significant bit 3	_
SCM3	"not" Select Code Most significant bit 3	_
SCM4	Select Code Most significant bit 4	_
SCM4	"not" Select Code Most significant bit 4	_
SCM5	Select Code Most significant bit 5	_
SCM5	"not" Select Code Most significant bit 5	_
SCM6	Select Code Most significant bit 6	_
SCM6	"not" Select Code Most significant bit 6	_
SCM7	Select Code Most significant bit 7	_
SCM7	"not" Select Code Most significant bit 7	_
SCO	Set/Clear Overflow	-
SCRY		429
SELM	Set Carry	430
SELT	Select M-register	431
SFC	Select T-register Skip if Flag is Clear (I/O)	432
SFM	Select F-register Mode	433
SFS	Skip if Flag is Set (I/O)	434 435
SFSB	Skip if Flag is Set (I/O) Skip if Flag is Set (I/O) (buffered)	435
SHIFT	Shift	436 437
SIOB	S-bus to I/O-bus	437
SIR	Set Interrupt Request	438
SKF	Skip on Flag (I/O)	439
SKIP	Skip on Flag (1/O) Skip (ROM instruction)	440
SL1		441
SL4	Shift Left 1 "not" Shift Left 4	442
SL4 SPH1B	i i	443
SPH 1B SPH2	Set Phase 1B	446
	Set Phase 2	447
SPH3	Set Phase 3	448
SPH5	Set Phase 5	449
SQM SB1	Select Q-register Mode	450
SR1	Shift Right 1	451

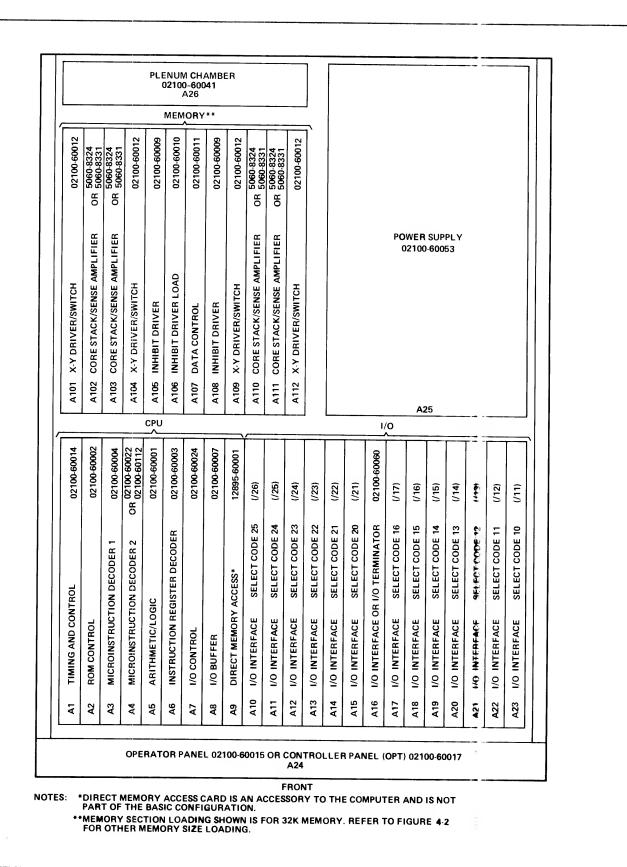
Table 4-1. Signal Index (Continued)

SIGNAL		REF
MNEMONIC	DEFINITION	NO.
	W. W. C. & DOM Address Desistan	452
SRAR	"not" Set ROM Address Register	453
SRH	Set Run Halt logic	455
SRHX	Set Run Halt logic, external	454
SRIR	Set ROM Instruction Register	455
SRQ10	Service Request s.c. 10	456
SRQ11	Service Request s.c. 11	457
SRQ12	Service Request s.c. 12	457
SRQ13	Service Request s.c. 13	459
SRQ14	Service Request s.c. 14	460
SRQ15	Service Request s.c. 15	461
SRQ16	Service Request s.c. 16	462
SRQ17	Service Request s.c. 17	463
SRQ20	Service Request s.c. 20	464
SRQ21	Service Request s.c. 21	465
SRQ22	Service Request s.c. 22	466
SRQ23	Service Request s.c. 23	467
SRQ24	Service Request s.c. 24	467
SRQ25	Service Request s.c. 25	400
SRQ25X	Service Request s.c. 25, external	_
SRQ26X	Service Request s.c. 26, external	_
SRQ27X	Service Request s.c. 27, external	100
SSCY	Set Single Cycle	469
SSCYX	Set Single Cycle, external	-
SSIN	Set Single Instruction	470
SSSR1	Set Service Select Register, Channel 1	_
SSSR2	Set Service Select Register, Channel 2	
STA	Store in A-register	471
STB	Store in B-register	472
STC	Set Control	473
STCLK	Store Clock	474
STF	Set Flag (I/O)	475
STI	Store in I-Register	476
STORE	Store (T- or M-register)	477
STOF	Store in F-register	478
STP	Store in P-register	479
STQ	Store in Q-register	480
SYNX	Sync External	_
T3	Time period 3 to I/O	481
T4	Time period 4	482
Т5	Time period 5	498
Т6	Time period 6	483
TBS1	T-Bus Select 1	484
TBS2	T-Bus Select 2	485
TBZ	T-Bus all Zeros	486
TRO	"not" T-Register bit 0	-
TR1	"not" T-Register bit 1	i –
TR2	"not" T-Register bit 2	-
TR3	"not" T-Register bit 3	-
TR4	"not" T-Register bit 4	_
TR5	"not" T-Register bit 5	_
TR6	"not" T-Register bit 6	_
TR7	"not" T-Register bit 7	_
TR8	"not" T-Register bit 8	_
TR9	"not" T-Register bit 9	_
TR10	"not" T-Register bit 10	_
TR11	"not" T-Register bit 11	_
TR12	"not" T-Register bit 12	_

2100A Section IV

Table 4-1. Signal Index (Continued)

SIGNAL MNEMONIC	DEFINITION	-	REF NO.
TR13	"not" T-Register bit 13		_
TR14	"not" T-Register bit 14		_
TR15	"not" T-Register bit 15		<u> </u>
TR16	"not" T-Register bit 16		_
UABF	Update A/B addressable FF		500
WCR1	"not" Word Count Register 1		487
WCR2	"not" Word Count Register 2		488
WSP1	Write SP1-register		489
WSP2	Write SP2-register		490
WSP3	Write SP3-register		491
WSP4	Write SP4-register		492
XENRM	External Enable ROM		
XT1	X-line Time 1		493
XT2	X-line Time 2		494
ZABF	Zero A- and B-register FF		501



2133-3C

Figure 4-1. Major Assembly Locations

Table 4-2. Memory Section Card Part Numbers

			MEMOR	Y SIZE		
CARD	4K	8K	12K	16K	24K	32K
4K Core Stack/Sense Amplifier (02100-60040)	A103	_	A102	_	-	_
8K Core Stack/Sense Amplifier (5060-8324) or (5060-8331)	-	A103	A103	A102, A103	A102, A103, A110	A102, A103, A110, A111
X-Y Driver/Switch (02100-60012)	A104	A104	A101, A104	A101, A104	A101, A104, A109	A101, A104, A109, A112
Inhibit Driver (02100-60008)	A105	A105	-	_	-	_
Inhibit Driver (02100-60009)	-	_	A105	A105	A105, A108	A105, A108
Inhibit Driver Load (02100-60010)	A106	A106	A106	A106	A106	A106
Data Control (02100-60011)	A107	A107	A107	A107	A107	A107

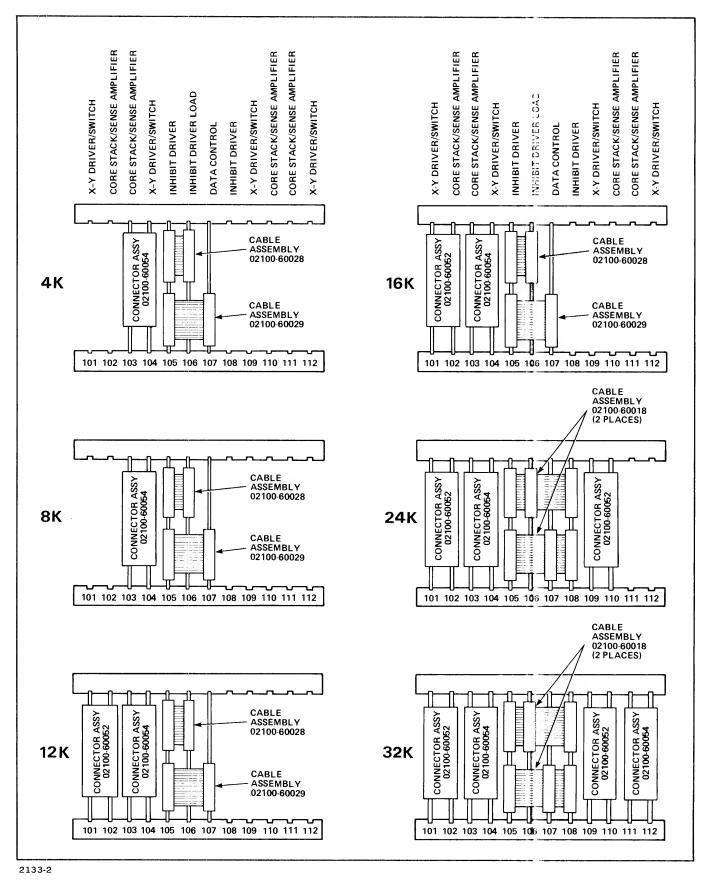
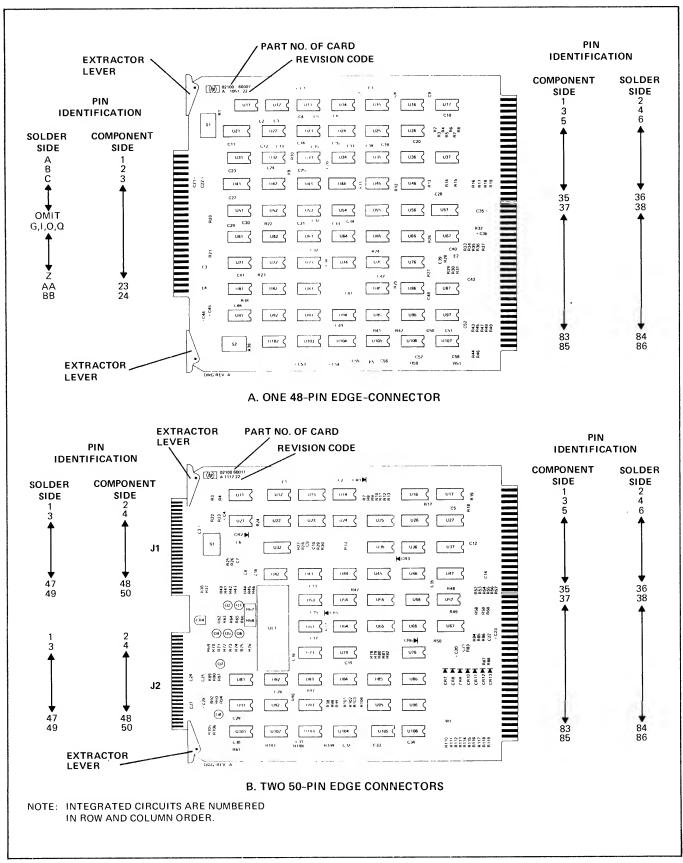


Figure 4-2. Card Cage Loading Configuration for Each Memory Size



2133-1

Figure 4-3. Particulars for Typical Printed Circuit Cards

Table 4-3. A1 Timing and Control Card, Replaceable Parts

Reference Designation	HP Part Number	Qty	Description	N fr Code	Mfr Part Number
A1 A1C1 A1C2 A1C3 A1C4	02100-60014 0180-0197 0180-0197 0160-2055 0160-2055	1 6 28	TIMING ANO CONTROL CARO C:FXO ELECT 2.2 UF 10% 20VOCW C:FXO ELECT 2.2 UF 10% 20VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW	334 80 562 89 562 89 562 89 562 89	02100-60014 1500225X9020A2-DYS 1500225X9020A2-OYS C023F101F103Z522-COH C023F101F103Z522-COH
A1C5 A1C6 A1C7 A1C8 A1C9	0160-2055 0160-2055 0160-2055 0160-2055 0160-2055		C:FXO CER 0.01 UF +80-2D% 100 VOCW C:FXO CER 0.01 UF +8D-20% 100 VOCW C:FXD CER 0.01 UF +8D-20% 100 VOCW C:FXO CER 0.01 UF +8D-20% 100 VOCW C:FXO CER 0.01 UF +80-20% 100 VOCW	56289 56289 56289 56289 56289	C023F101F103ZS22=C0H C023F101F103ZS22=C0H C023F101F103ZS22=C0H C023F101F103ZS22=C0H C023F101F103ZS22=C0H
A1C10 A1C11 A1C12 A1C13 A1C14	0160-2055 0160-2055 0160-2055 0160-2055 0160-2055		C:FXO CER D.O1 UF +8D-20% 10DVOCW C:FXO CER D.D1 UF +80-20% 100VDCW C:FXD CER 0.01 UF +8D-20% 100VDCW C:FXO CER D.01 UF +8D-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VDCW	56289 56289 56289 55289 55289	C023F1D1F1D3ZS22-CDH C023F101F103ZS22-CDH C023F101F103ZS22-CDH C023F101F103ZS22-CDH C023F1D1F103ZS22-CDH
A1C15 A1C16 A1C17 A1C18 A1C19	018D-0197 016D-2055 016D-2055 016D-2055 016D-2055		C:FXD ELECT 2.2 UF 10% 20V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 CER 0.01 UF +8D-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 10DVDCW C:FXD CER D.01 UF +80-20% 100V0CW	56289 56289 56289 56289 56289	150D225X9D20A2-DYS C023F101F103Z522-CDH C023F101F103Z522-CDH C023F101F103Z522-CDH C023F101F103Z522-CDH
A1C20 A1C21 A1C22 A1C23 A1C24	0180-0197 0160-2055 0160-2055 D160-2055 0160-2055		C:FX0 ELECT 2.2 UF 10% 20V0CW C:FX0 CER D.01 UF +80-20% 10DVDCW C:FXD CER D.D1 UF +80-20% 100VDCW C:FX0 CER 0.D1 UF +8D-20% 100V0CW C:FX0 CER 0.D1 UF +80-20% 100VDCW	56289 56289 56289 56289 56289	1500225X9020A2-DYS CD23F101F103Z522-COH CD23F101F103Z522-CDH CO23F101F103Z522-CDH CO23F101F103Z522-COH
A1C25 A1C26 A1C27 A1C28 A1C29	0160-2055 0160-2055 0180-0197 0180-0197 0140-0198	1	C:FXD CER 0.01 UF +80-20% 100VDCW C:FX0 CER 0.01 UF +80-20% 100VDCW C:FX0 ELECT 2.2 UF 10% 20VOCW C:FX0 ELECT 2.2 UF 10% 20VOCW C:FX0 MICA 20D PF 5%	56289 56289 56289 56289 56289 72136	C023F1D1F1D3ZS22-C0H C023F101F103ZS22-C0H 15D0225X9020A2-DYS 1500225X9020A2-DYS RDM15F2D1J3C
A1C30 A1C31 A1C32 A1C33 A1C34	0160-2055 0160-2055 0160-2055 0160-2055 0160-2055		C:FX0 CER 0.01 UF +80-20% 100VDCW C:FX0 CER 0.01 UF +8D-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 100VDCW C:FX0 CER 0.01 UF +80-20% 100VDCW	5ic 289 5ic 289 5ic 289 5ic 289 5ic 289	C023F101F103ZS22-C0H C023F101F103ZS22-C0H C023F101F103ZS22-C0H C023F101F103ZS22-C0H C023F101F103ZS22-C0H
A1C35 A1E1 A1E2 A1E3 A1E4	0160-2055 0360-0294 0360-0294 0360-0294 0360-0294	5	C:FXO CER D.D1 UF +8D-2D% 100VDCW TERMINAL:SOLDER POINT TERMINAL:SOLDER POINT TERMINAL:SOLDER POINT TERMINAL:SOLDER POINT	5#.289 2#.480 2#.480 2#.480 2#.480	C023F101F103ZS22=CDH D36D=0294 D36D=D294 036D=D294 036D=0294
A1E5 A1R1 A1R2 A1R3 A1R4	036D-0294 0757-D28D 0757-1094 0698-3446 0698-3446	15 3 3	TERMINAL:SOLDER POINT R:FXO MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 1.47K OHM 1% 1/8W R:FXO MET FLM 383 OHM 1% 1/8W R:FXO MET FLM 383 OHM 1% 1/8W	25480 25480 25480 25480 25480	D360-0294 0757-0280 0757-1094 0698-3446 0698-3446
A1R5 A1R6 A1R7 A1R8 A1R9	D757-0284 0757-028D 0757-0416 0757-0416 0757-0416	1	R:FXD MET FLM 150 OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0284 0757-0280 0757-0416 0757-0416 0757-0416
A1R10 A1R11 A1R12 A1R13 A1R14	0757-0416 0757-0416 0757-0416 0757-0416 0757-0280		R:FXO MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0416 0757-0416 0757-0416 0757-0416 0757-0280
A1R15 A1R16 A1R17 A1R18 A1R19	0757-0280 0757-0416 0757-0416 0757-0280 0757-0280		R:FXO MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-D280 0757-D416 0757-0416 0757-0280 0757-0280
A1R20 A1R21 A1R22 A1R23 A1R24	0757-0280 0698-3440 0757-0416 0757-1094 0757-0416	1	R:FXO MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 196 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 1.47K OHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W	2848D 28480 2848D 2848D 28480	0757-0280 0698-3440 0757-0416 0757-1094 0757-0416
A1R25 A1R26 A1R27 A1R28 A1R29	0757-1094 0698-3446 0757-0416 0683-1825 0683-1025	2 2	R:FXO MET FLM 1.47K OHM 1% 1/8W R:FXO MET FLM 383 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO COMP 1800 OHM 5% 1/4W R:FXO COMP 1000 OHM 5% 1/4W	28480 28480 28480 01121 01121	0757-1094 0698-3446 0757-0416 CB 1825 CB 1025
A1R30 A1R31 A1R32 A1R33 A1R34	0683-1825 D683-1025 0757-0280 0757-0280 0757-0280		R:FXD COMP 18DO OHM 5% 1/4W R:FXO COMP 10OD OHM 5% 1/4W R:FXO MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W	01121 01121 20480 20480 20480	C8 1825 C8 1025 0757-D280 0757-D280 0757-0280

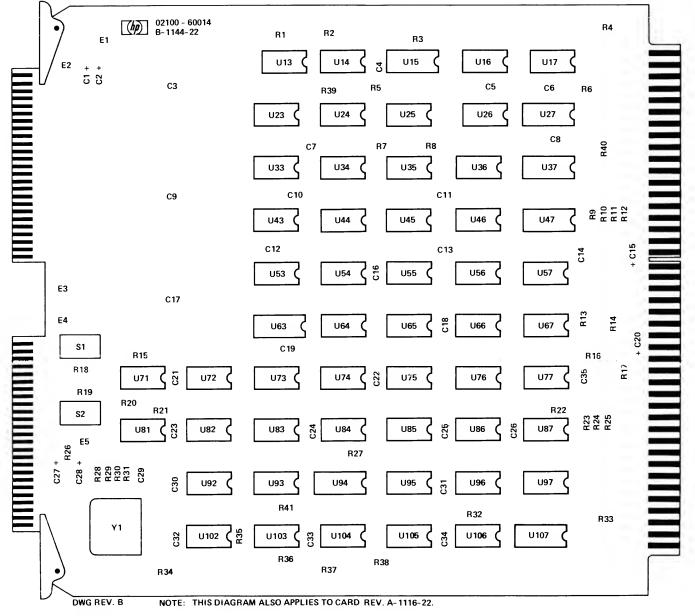
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Table 4-3. A1 Timing and Control Card, Replaceable Parts (Continued)

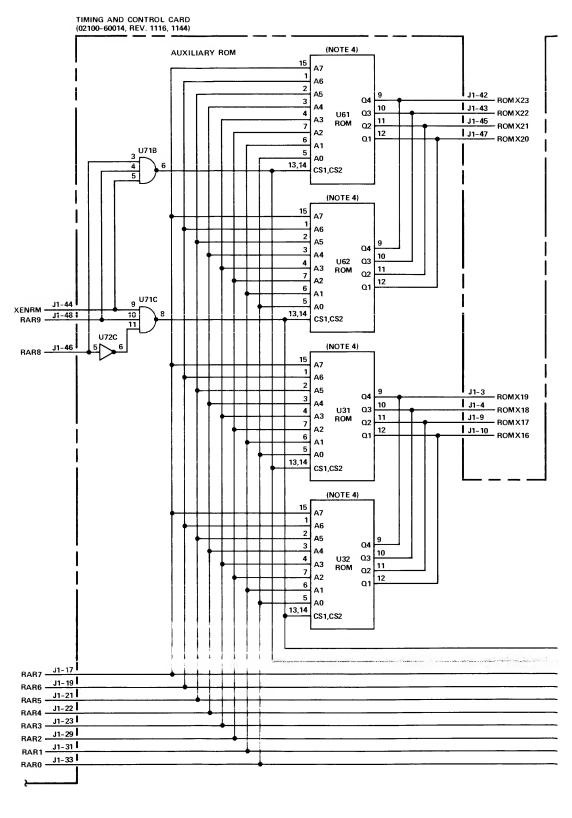
Reference Designation	HP Part Number	Qty	Description	Vifr Code	Mfr Part Number
A1R35 A1R36 A1R37 A1R38 A1R39	0757-0280 0757-0280 0757-0280 0757-0280 0757-0280 0698-3442	1	R:FXO MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 237 OHM 1% 1/8W	28480 28480 28480 28480 28480 28480	0757-0280 0757-0280 0757-0280 0757-0280 0698-3442
A1R40 A1R41 A1S1 A1S2 A1U13	0757-0416 0757-0280 3101-1213 3101-1213 1820-0141	2 4	R:FXD MET FLM 511 OHM 1* 1/8W R:FXD MET FLM 1K OHM 1* 1/8W SWITCH:TOGGLE OPST-08 SU8-MINIATURE SWITCH:TOGGLE OPST-08 SU8-MINIATURE IC:TTL QUAO 2-INPT ANO GATE	28480 28480 81640 81640 04713	0757-0416 0757-0280 T8001 T8001 MC3001P
A1U14 A1U15 A1U16 A1U17 A1U23	1820-0370 1820-0485 1820-0424 1820-0954 1820-0186	6 4 5 2 5	IC:TTL HS QUAD 2-INPT NANO GATE IC:CTL HEX LEVEL RESTORER IC:TTL HS HEX INVERTER IC:CTL OUAL 4-INPT AND GATE IC:CTL OUAL 2-INPT AND GATE	01295 07263 04713 07263 07263	SN74H00N U68981649X SN74H04N U6A995479X U6A985649X
A1U24 A1U25 A1U26 A1U27 A1U33	1820-0966 1820-0187 1820-0424 1820-0954 1820-0965	4 1 3	IC:CTL OUAL 2-INPT ANO 2M ANO/OR GATE IC:CTL OUAL 2-INPT NOR GATE IC:TTL HS HEX INVERTER IC:CTL DUAL 4-INPT ANO GATE IC:CTL QUAO 1-INPT ANO GATE	14433 07263 04713 07263 07263	MIC 966 U6A985249X SN74H04N U6A995479X U6A996579X
A1U34 A1U35 A1U36 A1U37 A1U43	1820-0186 1820-0186 1820-0964 1820-0965	3	IC:CTL DUAL 2-INPT ANO GATE IC:CTL DUAL 2-INPT ANO GATE IC:CTL TRIPLE 3-3-1 INPT ANO GATE IC:CTL TRIPLE 3-3-1 INPT ANO GATE IC:CTL QUAD 1-INPT ANO GATE	07263 07263 14433 14433 07263	U6A985649X U6A985649X MIC 964 MIC 964 U6A996579X
A1U44 A1U45 A1U46 A1U47 A1U53	1820-0965 1820-0966 1820-0966 1820-0186 1820-0512	1	IC:CTL QUAD 1-INPT AND GATE IC:CTL OUAL 2-INPT ANO 2W ANO/OR GATE IC:CTL OUAL 2-INPT ANO 2W AND/OR GATE IC:CTL DUAL 2-INPT ANO GATE IC:TTL DUAL 0 F/F	07263 19433 19433 07263 01295	U6A996579X MIC 966 MIC 966 U6A985649X SN74H74N
A1U54 A1U55 A1U56 A1U57 A1U63	1820-0370 1820-0609 1820-0609 1820-0964 1820-0485	5	IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL DUAL J-K F/F W/COM. CLK & RESET IC:TTL OUAL J-K F/F W/COM. CLK & RESET IC:CTL TRIPLE 3-3-1 INPT AND GATE IC:CTL HEX LEVEL RESTORER	01295 04713 04713 14433 07263	SN74H00N MC3061P MC3061P MIC 964 U68981649X
A1U64 A1U65 A1U66 A1U67 A1U71	1820-0370 1820-0370 1820-0141 1820-0186 1820-0371	3	IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL HS QUAD 2-INPT NANO GATE IC:TTL QUAO 2-INPT ANO GATE IC:CTL QUAL 2-INPT ANO GATE IC:TTL HS TRIPLE 3-INPT NANO GATE	01295 01295 04713 07263 01295	SN74H00N SN74H00N MC3001P U6A985649X SN74H10N
A1U72 A1U73 A1U74 A1U75 A1U76(NOTE 1)	1820-0424 1820-0141 1820-0609 1820-0371 1820-0451	2	IC:TTL HS HEX INVERTER IC:TTL QUAO 2-INPT ANO GATE IC:TTL DUAL J-K F/F W/COM. CLK & RESET IC:TTL HS TRIPLE 3-INPT NANO GATE IC:TTL OUAL J-K F/F	04713 04713 04713 04713 01295 04713	SN74H04N MC3001P MC3061P SN74H10N MC3062P
A1U77 A1U81(NOTE 1) A1U82 A1U83 A1U84	1820-0966 1820-0451 1820-0141 1820-0609 1820-0372	3	IC:CTL OUAL 2-INPT ANO 2W ANO/OR GATE IC:TTL OUAL J-K F/F IC:TTL QUAO 2-INPT ANO GATE IC:TTL OUAL J-K F/F W/COM. CLK & RESET IC:TTL TRIPLE 3-INPT AND GATE	14433 04713 04713 04713 28480	MIC 966 MC3062P MC3001P MC3061P 1820-0372
A1U85 A1U86 A1U87 A1U92 A1U93	1820-0609 1820-0424 1820-0374 1820-0681 1820-0370	1 1	IC:TTL DUAL J-K F/F W/COM. CLK & RESET IC:TTL HS HEX INVERTER IC:TTL HS DUAL 4-INPT AND GATE IC:TTL QUAO 2-INPT NANO GATE IC:TTL HS QUAD 2-INPT NAND GATE	04713 04713 01295 01295 01295	MC3061P SN74H04N SN74H21N SN74S00N SN74H00N
A1U94 A1U95 A1U96 A1U97 A1U102	1820-0485 1820-0371 1820-0370 1820-0424 1820-0140	2	IC:CTL HEX LEVEL RESTORER IC:TTL HS TRIPLE 3-INPT NANO GATE IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL HS HEX INVERTER IC:TTL DUAL 4-INPT AND 8UFFER	d7263 d1295 d1295 d4713 d4713	U68981649X SN74H10N SN74H00N SN74H04N MC3026P
A1U103 A1U104 A1U105 A1U106 A1U107	1820-0140 1820-0372 1820-0372 1820-0373 1820-0485	1	IC:TTL QUAL 4-INPT AND SUFFER IC:TTL TRIPLE 3-INPT AND GATE IC:TTL TRIPLE 3-INPT AND GATE IC:TTL HS DUAL 4-INPT NAND GATE IC:CTL HEX LEVEL RESTORER	04713 28480 28480 01295 07263	MC3026P 1820-0372 1820-0372 SN74H20N U68981649X
AIXYI AIYI	1200-0199 0410-0432	1	SOCKET:CRYSTAL CRYSTAL:QUARTZ	9±506 28480	8000-AG9 0410-0432

4-23

REF.		DAOKOLANE I		_	NDICATES SI	GNAL SOURCE	
NO.		BACKPLANE I	LUCATION				
A 1							
15	A1-60	A4-62*					
19 20	A1-51* A1-72*						
21	A1-84*		A6-31	A8-7Ø			
55	A1-78*	A3-81		A8-42	A9-76	A24-64	
	A107-69						
23	A1-70*	A6-55 A7-25					
24 25	A1-77* A1-76*						
28	A1-52*		A24-43				
31	A1-10	A8-64#					
33	A1-42	A24-60*	A107-6	10-20	A10-46 TH	IDII 422-46	
38 40	A1-50 A1-58*	A7-4 A2-63	A8-5/*	A9-29	AIW-40 IF	1KU AZ3-40	
42	A1-36	A2-65*	A4-55				
47	A1-67	A4-64	A24-21#				
55	A1-80	A3-35*	A6-43				
56	A1-65	A7-65*	A8-5Ø*	A24-74			
199	A1-24	A8-68*	A107-79				
200 201	A1-37 A1-43*	A24-33* A5-3	A101-19				
203	A1-22	A7-45*					
223	A1-83	A6-21*	A7-38				
239	A1-9	A2-8Ø		A4-24	A6-58*	A8-63	
240	A1-3	A2-79	A6-44*				
241 242	A1-7 A1-5	A2-78 A2-81	A6-49* A6-46*				
243	A1-12	A2-82	A6-45*				
244	A1-56*		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
252	A1-73	A4-46#					
293	A1-81	A4-65*					
295	A1-63	A3-27	A8-58*				
296 297	A1-41* A1-30*	A8-53 A7-12	A24-49 A8-71	A24-50			
298	A1-28*		AG , I	AL 1 30			
299	A1-26*						
305	A1-6	A7-8*	A24-67	A104-42	A107-70		
205	_	THRU A23-66					
325 334	Al-4 Al-54*	A24-13* A3-28*	A4-27	A9-31*	A24-77*	A107-72	
335	A1-8*	A2-70	A4-30	A6-9	A7-20	A8-75	
	A107-82						
348	A1-75*						
369	A1-71		A4-17*				
374 375	A1-69 A1-49#	A7-46* A10-50 TH	DII A23-50				
411	A1-14	A2-11*	A4-75	A5-4#	A6-41	A8-33*	
	A9-84#	A107-52					
416	A1-66	A24-11*					
417	A1-68	A24-5*					
429 430	A1-79 A1-44	A24-3* A6-28*					
431	A1-53*	A3-22*	A8-60	A9-35#	A24-42#	A107-66	
440	A1-17	A4-16#	A7-21*	A10-12*	THRU A23-12	2*	
446	A1-31#	A2-74					
447	A1-34#	A2-73	A8-72				
448	A1-35*	A2-55 A2-60					
452 453	A1-61* A1-74	A24-62#					
454	A1-55	A2-62	A3-42	A4-52	A6-76*		
469	A1-62	A24-58*					
470	A1-64	A24-59*	40.1-				
474	A1-36*	A2-59	A3-18				
482 500	A1-16 A1-59+	A8-44# A4-31	A9-8Ø				
501	A1-57*	A4-53					
502	A1-13*	A6-29					



See table 4-3 for replaceable parts.



(SEE SHEET 1)

DWG REV. B (SHEET 2 OF 2) SEE SHEET 1 FOR NOTES.

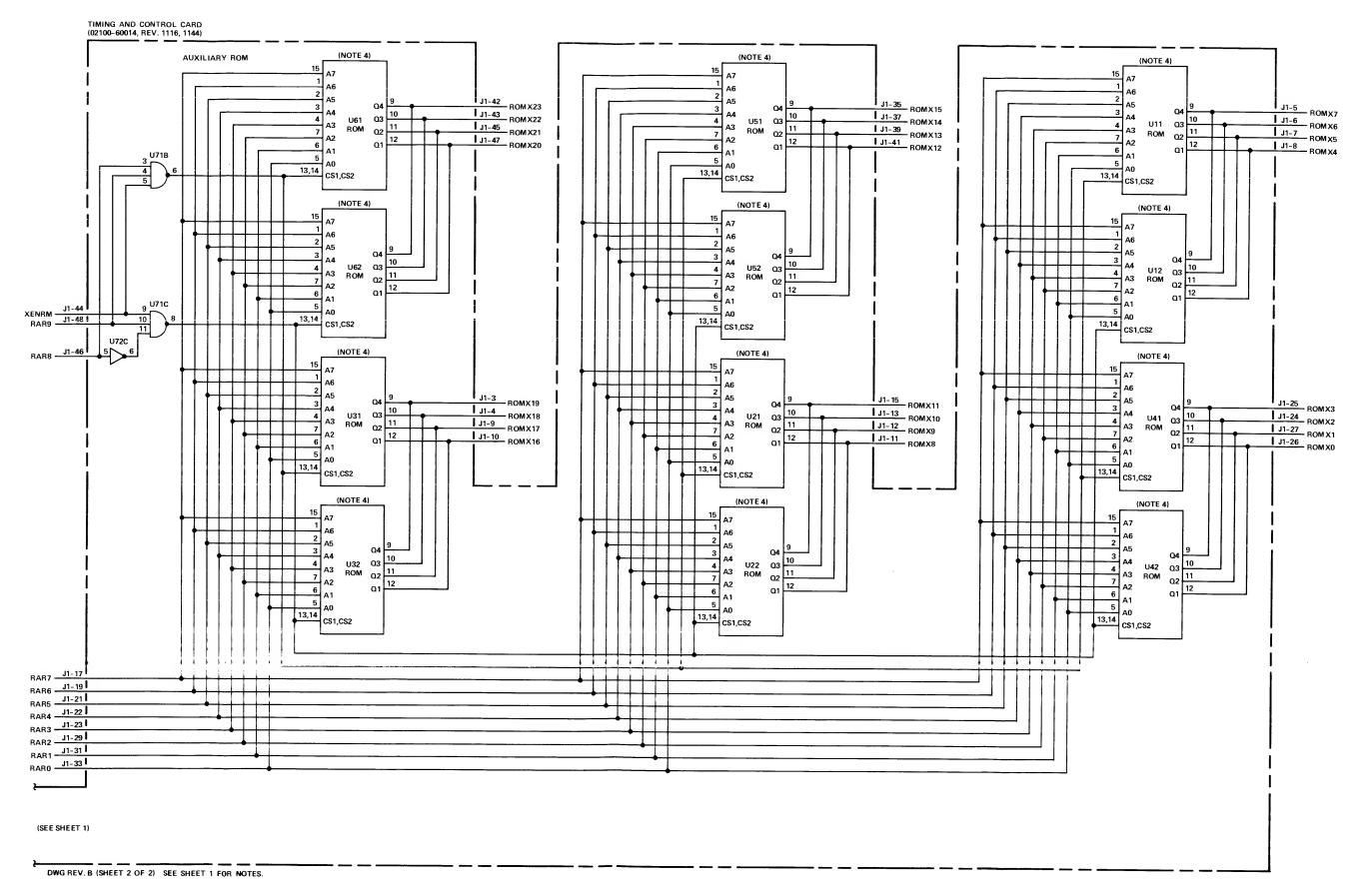


Figure 4-4. A1 Timing and Control Card, Parts Location and Schematic Diagrams (Sheet 2 of 2)

Table 4-4. A2 ROM Control Card, Replaceable Parts

Table 4-4. AZ ROM Control Card, Replaceable Parts						
Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number	
A2 A2C1 A2C2 A2C3	02100-60002 0160-2055 0160-2055 0160-2055	1 26	RDM CDNTRDL CARO C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VOCW	28480 56289 56289 56289	02100-60002 C023F101F103ZS22-COH C023F101F103ZS22-COH C023F101F103ZS22-COH	
A2C4 A2C5 A2C6 A2C7 A2C8	0180-0197 0180-0197 0160-2055 0160-2055 0160-2055	6	C:FXD ELECT 2.2 UF 10% 20VDCW C:FXD ELECT 2.2 UF 10% 20VDCW C:FXO CER 0.01 UF +80-20% 100V0CW C:FXO CER 0.01 UF +80-20% 100V0CW C:FXD CER 0.01 UF +80-20% 100VDCW	56289 56289 56289 56289 56289	1500225X9020A2-DYS 1500225X9020A2-OYS C023F101F103ZS22-COH C023F101F103ZS22-COH C023F101F103ZS22-COH	
A2C9 A2C10 A2C11 A2C12 A2C13	0160-2055 0160-2055 0160-2055 0160-2055 0160-2055		C:FXO CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VDCW	562 89 562 89 562 89 562 89 562 89	C023F101F103ZS22=C0H C023F101F103ZS22=C0H C023F101F103ZS22=C0H C023F101F103ZS22=C0H C023F101F103ZS22=C0H	
A2C14 A2C15 A2C16 A2C17 A2C18	0160-2055 0180-0197 0160-2055 0160-2055 0160-2055		C:FXD CER 0.01 UF +80-20% 100VDCW C:FX0 ELECT 2.2 UF 10% 20VOCW C:FX0 CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VOCW C:FX0 CER 0.01 UF +80-20% 100VDCW	56289 56289 56289 56289 56289	C023F101F103ZS22=C0H 1500225X9020A2=OYS C023F101F103ZS22=C0H C023F101F103ZS22=C0H C023F101F103ZS22=C0H	
A2C19 A2C20 A2C21 A2C22 A2C23	0180-0197 0160-2055 0160-2055 0160-2055 0160-2055		C:FXD ELECT 2.2 UF 10% 20VDCW C:FXO CER 0.01 UF +80-20% 100V0CW C:FXD CER 0.01 UF +80-20% 100V0CW C:FXD CER 0.01 UF +80-20% 100V0CW C:FXO CER 0.01 UF +80-20% 100V0CW	562 89 562 89 562 89 562 89 562 89	1500225X9020A2-0YS C023F101F103ZS22-C0H C023F101F103ZS22-C0H C023F101F103ZS22-C0H C023F101F103ZS22-C0H	
A2C24 A2C25 A2C26 A2C27 A2C28	0160-2055 0180-0197 0180-0197 0160-2055 0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO ELECT 2.2 UF 10% 20VOCW C:FXD ELECT 2.2 UF 10% 20VOCW C:FXD CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VOCW	56289 56289 56289 56289 56289	C023F101F103ZS22-C0H 1500225X9020A2-DYS 1500225X9020A2-OYS C023F101F103ZS22-C0H C023F101F103ZS22-C0H	
A2C29 A2C30 A2C31 A2C32 A2E1	0160-2055 0160-2055 0160-2055 0160-2055 0360-0294	3	C:FXO CER 0.01 UF +80-20% 100V0CW C:FXO CER 0.01 UF +80-20% 100V0CW C:FXO CER 0.01 UF +80-20% 100V0CW C:FXO CER 0.01 UF +80-20% 100V0CW TERMINAL:SOLDER POINT	562 89 562 89 562 89 562 89 284 80	C023F101F103ZS22=C0H C023F101F103ZS22=C0H C023F101F103ZS22=C0H C023F101F103ZS22=C0H 0360=0294	
A 2 E 2 A 2 E 3 A 2 R 1 A 2 R 2 A 2 R 3	0360-0294 0360-0294 0698-7229 0698-7229 0698-7229	42	TERMINAL:SOLOER POINT TERMINAL:SOLOER POINT R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W	284 80 284 80 284 80 284 80 284 80	0360-0294 0360-0294 0698-7229 0698-7229 0698-7229	
A2R4 A2R5 A2R6 A2R7 A2R8	0698-7229 0698-7229 0698-7229 0698-7229 0698-7229		R:FXD FLM 511 DHM 2% 1/8W R:FXO FLM 511 DHM 2% 1/8W R:FXO FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W	284 80 284 80 284 80 284 80 284 80	0698-7229 0698-7229 0698-7229 0698-7229 0698-7229	
A2R9 A2R10 A2R11 A2R12 A2R13	0698-7229 0698-7229 0698-7229 0698-7229 0698-7229		R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W	28480 28480 28480 28480 28480	0698-7229 0698-7229 0698-7229 0698-7229 0698-7229	
A2R14 A2R15 A2R16 A2R17 A2R18	0698-7226 0698-7229 0698-7229 0698-7229 0698-7229	2	R:FXO FLM 383 OHM 2% 1/8W R:FXD FLM 511 OHM 2% 1/8W R:FXO FLM 511 DHM 2% 1/8W R:FXO FLM 511 DHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W	284 80 284 80 284 80 284 80 284 80	0698-7226 0698-7229 0698-7229 0698-7229 0698-7229	
A2R19 A2R2O A2R21 A2R22 A2R23	0698-7236 0698-7236 0698-7229 0698-7229 0698-7229	6	R:FXO FLM 1K OHM 2% 1/8W R:FXD FLM 1K OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W	28480 28480 28480 28480 28480	0698-7236 0698-7236 0698-7229 0698-7229 0698-7229	
A2R24 A2R25 A2R26 A2R27 A2R28	0698-7229 0698-7229 0698-7236 0698-7225 0698-7225	15	R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 1k DHM 2% 1/8W R:FXO FLM 348 DHM 2% 1/8W R:FXD FLM 348 DHM 2% 1/8W	28480 28480 28480 28480 28480 28480	0698-7229 0698-7229 0698-7236 0698-7225 0698-7225	
A2R 29 A2R 30 A2R 31 A2R 32 A2R 33	0698-7229 0698-7229 0698-7225 0698-7229 0698-7229		R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 348 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W	284 80 284 80 284 80 284 80 284 80	0698-7229 0698-7229 0698-7225 0698-7229 0698-7229	
A2R34 A2R35 A2R36 A2R37 A2R38	0698-7229 0698-7229 0698-7229 0698-7229 0698-7225		R:FXD FLM 511 DHM 2% 1/8W R:FXO FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W	28480 28480 28480 28480 28480 28480	0698-7229 0698-7229 0698-7229 0698-7229 0698-7229	

Table 4-4. A2 ROM Control Card, Replaceable Parts (Continued)

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A2R39 A2R40 A2R41 A2R42 A2R42 A2R43	0698-7225 0698-7225 0698-7225 0698-7225 0698-7225		R:FXO FLM 348 OHM 2% 1/8W R:FXO FLM 348 OHM 2% 1/8W R:FXO FLM 348 OHM 2% 1/8W R:FXO FLM 348 OHM 2% 1/8W R:FXO FLM 348 OHM 2% 1/8W	28480 28480 28480 28480 28480	0698-7225 0698-7225 0698-7225 0698-7225 0698-7225
A2R44 A2R45 A2R46 A2R47 A2R48	0698-7225 0698-7225 0698-7229 0698-7236 0698-7225		R:FXO FLM 348 OHM 2% 1/8W R:FXO FLM 348 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 1K OHM 2% 1/8W R:FXO FLM 348 OHM 2% 1/8W	28480 28480 28480 28480 28480	0698-7225 0698-7225 0698-7229 0698-7236 0698-7225
A2R49 A2R50 A2R51 A2R52 A2R52	0698-7229 0698-7225 0698-7229 0698-7229 0698-7236		R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 348 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W	28480 28480 28480 28480 28480	0698-7229 0698-7225 0698-7229 0698-7229 0698-7236
A2R54 A2R55 A2R56 A2R57 A2R57	0698-7229 0698-7220 0698-7229 0698-7225 0698-7229	1	R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 215 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 348 OHM 2% 1/8W R:FXD FLM 511 OHM 2% 1/8W	28480 28480 28480 28480 28480	0698-7229 0698-7220 0698-7229 0698-7225 0698-7229
A2R59 A2R60 A2R61 A2R62 A2R63	0698-7234 0698-7229 0698-7229 0698-7229 0698-7229	1	R:FXD FLM 825 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W	2 84 80 284 80 2 84 80 2 84 80 2 84 80	0698-7234 0698-7229 0698-7229 0698-7229 0698-7229
A2R64 A2R65 A2R66 A2R67 A2R68	0698-7221 0698-7221 0698-7216 0698-7225 0698-7229	2 1	R:FXO FLM 237 OHM 2% 1/8W R:FXO FLM 237 OHM 2% 1/8W R:FXO MET FLM 147 OHM 2% 1/8W R:FXO FLM 348 OHM 2% 1/8W R:FXO FLM 348 OHM 2% 1/8W	28480 28480 28480 28480 28480	0698-7221 0698-7221 0698-7216 0698-7225 0698-7229
A2R69 A2R70 A2R71 A2R72 A2R73(NOTE 1)	0698-7222 0698-7222 0698-7222 0698-7226 0698-7236	3	R:FXO FLM 261 OHM 2% 1/8W R:FXO FLM 261 OHM 2% 1/8W R:FXO FLM 261 OHM 2% 1/8W R:FXO FLM 383 OHM 2% 1/8W R:FXO FLM 1K OHM 2% 1/8W	2 84 80 2 84 80 2 84 80 2 84 80 2 84 80	0698-7222 0698-7222 0698-7222 0698-7226 0698-7236
A2U13 A2U14 A2U15 A2U16 A2U17	1820-0971 1820-0966 1816-2062 1816-2065 1816-2064	4 12 1 1	IC:CTL OUAL 2W-2-INPT AND/OR GATE IC:CTL OUAL 2-INPT ANO 2W AND/OR GATE IC:ROM # 062 IC:ROM # 065 IC:ROM # 064	07263 14433 28480 28480 28480	U6A997179X MIC 966 1816–2062 1816–2065 1816–2064
A2U23 A2U24 A2U25(NOTE 2) A2U26(NOTE 2) A2U27(NOTE 2)	1820-0971 1820-0966 1816-0056 1816-0059 1816-0058	1 1 1	IC:CTL OUAL 2W-2-INPT ANO/OR GATE IC:CTL OUAL 2-INPT ANO 2W AND/OR GATE IC:ROM 4 X 256 IC:ROM 4 X 256 IC:ROM 4 X 256	07263 14433 28480 28480 28480	U6A997179X MIC 966 1816-0056 1816-0059 1816-0058
A2U31 A2U32 A2U34 A2U35(NOTE 2) A2U36	1820-0953 1820-0231 1820-0966 1816-0055 1820-0437	4 3 1 2	IC:CTL TRIPLE 2-2-3 INPT ANO GATE IC:TTL 4-BIT SYNC BINARY COUNTER IC:CTL OUAL 2-INPT ANO 2M ANO/OR GATE IC:ROM 4 X 256 IC:TTL QUAO 0 F/F	14433 07263 14433 28480 04713	MIC 953 U68931659X MIC 966 1816-0055 MC4015P
A2U37(NOTE 2) A2U41 A2U42 A2U44 A2U45	1816-0054 1820-0379 1820-0301 1820-0966 1816-2061	1 4 3 1	IC:ROM 4 X 256 IC:TTL HS 4W 2-2-2-3 INPT AND/OR GATE IC:TTL QUAD 8I-STABLE D-LATCH IC:CTL DUAL 2-INPT AND 2W AND/OR GATE IC:ROM # 061	28480 01295 01295 14433 28480	1816-0054 SN74H52N SN7475N MIC 966 1816-2061
A2U46 A2U47 A2U51 A2U52 A2U53	1820-0437 1816-2060 1820-0379 1820-0231 1820-0231	1	IC:TTL QUAO O F/F IC:ROM # 060 IC:TTL HS 4M 2-2-2-3 INPT ANO/OR GATE IC:TTL 4-BIT SYNC BINARY COUNTER IC:TTL 4-BIT SYNC BINARY COUNTER	04713 28480 01295 07263 07263	MC4015P 1816-2060 SN74H52N U6B931659X U6B931659X
A2U54 A2U55 A2U56 A2U57 A2U61	1820-0301 1816-2063 1820-0376 1820-0374 1820-0379	1 1 1	IC:TTL QUAO 8I-STA8LE D-LATCH IC:ROM # 063 IC:TTL OUAL 4-INPT NAND POWER GATE IC:TTL HS OUAL 4-INPT AND GATE IC:TTL HS 4W 2-2-2-3 INPT AND/OR GATE	01295 28480 01295 01295 01295	SN7475N 1816-2063 SN74H74N SN74H21N SN74H52N
A2U62 A2U63 A2U64 A2U65(NOTE 2) A2U66	1820-0301 1820-0966 1820-0966 1816-0057 1820-0966	1	IC:TTL QUAO 8I-STABLE O-LATCH IC:CTL QUAL 2-INPT AND 2M AND/OR GATE IC:CTL QUAL 2-INPT ANO 2M ANO/OR GATE IC:ROM 4 X 256 IC:CTL QUAL 2-INPT ANO 2M AND/OR GATE	01295 14433 14433 28480 14433	SN7475N MIC 966 MIC 966 1816-0057 MIC 966
A2U67 A2U71 A2U72 A2U73 A2U74	1820-0971 1820-0379 1820-0966 1820-0966 1820-0971		IC:CTL DUAL 2W-2-INPT ANO/OR GATE IC:TTL HS 4W 2-2-2-3 INPT ANO/OR GATE IC:CTL OUAL 2-INPT ANO 2W ANO/OR GATE IC:CTL DUAL 2-INPT ANO 2W ANO/OR GATE IC:CTL OUAL 2W-2-INPT ANO/OR GATE	07263 01295 14433 14433 07263	U6A997179X SN74H52N MIC 966 MIC 966 U6A997179X

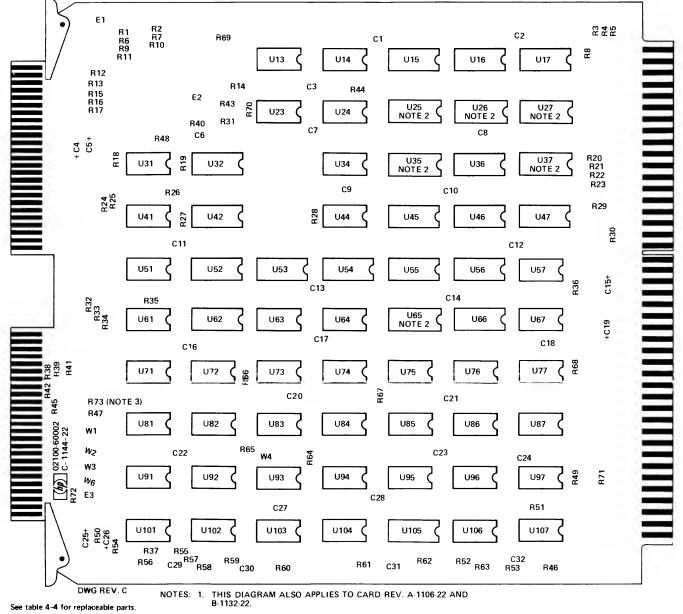
NOTES: 1. First used on card rev. 1144.
2. Used only on cards having floating-point capability.

Table 4-4. A2 ROM Control Card, Replaceable Parts (Continued)

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A2U75 A2U76 A2U77 A2U81 A2U82	1820-0966 1820-0966 1820-0186 1820-0141 1820-0370	4 2 2	IC:CTL DUAL 2-INPT AND 2W AND/OR GATE IC:CTL DUAL 2-INPT AND 2W AND/OR GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL QUAD 2-INPT AND GATE IC:TTL HS QUAD 2-INPT NAND GATE	14: 33 14: 33 07:263 04:713 01: 195	MIC 966 MIC 966 U6A985649X MC3001P SN74H00N
A2U83 A2U84 A2U85 A2U86 A2U87	1820-0965 1820-0186 1820-0424 1820-0141 1820-0370	2 1	IC:CTL QUAD 1-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL HS HEX INVERTER IC:TTL QUAD 2-INPT AND GATE IC:TTL HS QUAD 2-INPT NAND GATE	01/63 07/63 04/13 04/13 01/95	U6A996579X U6A985649X SN74H04N MC3001P SN74H00N
A2U91 A2U92 A2U93 A2U94 A2U95	1820-0186 1820-0371 1820-0953 1820-0965 1820-0966	1	IC:CTL DUAL 2-INPT AND GATE IC:TTL HS TRIPLE 3-INPT NAND GATE IC:CTL TRIPLE 2-2-3 INPT AND GATE IC:CTL QUAD 1-INPT AND GATE IC:CTL DUAL 2-INPT AND 2W AND/OR GATE	07/63 01/95 14/33 07/63 14/33	U6A985649X SN74H10N MIC 953 U6A996579X MIC 966
A2U96 A2U97 A2U101 A2U102 A2U103	1820-0372 1820-0186 1820-0953 1820-0953 1820-0954	1	IC:TTL TRIPLE 3-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL TRIPLE 2-2-3 INPT AND GATE IC:CTL TRIPLE 2-2-3 INPT AND GATE IC:CTL DUAL 4-INPT AND GATE	28480 07263 14433 14433 07263	1820-0372 U6A985649X MIC 953 MIC 953 U6A995479X
A 2U104 A 2U105 A 2U106(NOTE 3) A 2U107 A 2W1	1820-0239 1820-0485 1820-0451 1820-0187 8159-0005	1 1 1 1 5	IC:TTL QUAD 2-INPT NOR GATE IC:CTL HEX LEVEL RESTORER IC:TTL DUAL J-K F/F IC:CTL DUAL 2-INPT NOR GATE JUMPER WIRE	28+80 07:63 04/13 07:63 28+80	1820-0239 U6B981649X MC3062P U6A985249X 8159-0005
A2W2 A2W3 A2W4 A2W6 A2XU25	8159-0005 8159-0005 8159-0005 8159-0005 1200-0767	6	JUMPER WIRE JUMPER WIRE JUMPER WIRE JUMPER WIRE SOCKET:1C 16 CONTACT DUAL LINE	264-80 264-80 264-80 264-80 91-06	8159-0005 8159-0005 8159-0005 8159-0005 316AG5D-3R
A2XU26 A2XU27 A2XU35 A2XU37 A2XU65	1200-0767 1200-0767 1200-0767 1200-0767 1200-0767		SOCKET:IC 16 CONTACT DUAL LINE SOCKET:IC 16 CONTACT DUAL LINE SOCKET:IC 16 CONTACT DUAL LINE SOCKET:IC 16 CONTACT DUAL LINE SOCKET:IC 16 CONTACT DUAL LINE	91:06 91:06 91:06 91:06 91:06	316AG5D-3R 316AG5D-3R 316AG5D-3R 316AG5D-3R 316AG5D-3R
(NOTE 4)	0340-0788	6	INSULATOR:IC SOCKET	9 15 0 6	316-6PI
			**		
	·	:			
NOTES: 3, Part no. 1	820-0695 used on some cards; th	e two parts are	interchangeable,		

NOTES: 3. Part no. 1820-0695 used on some cards; the two parts are interchangeable.
4. One 0340-0788 insulator is used with each 1200-0767 socket.

REF.				#	INDICATES	SIGNAL SOURCE	
NO.		BACKPLANE	LOCATION			,	
A2							
37	A2-64	A3-68#					
40	A1-58*	A2-63					
42	A1-46	A2-65*	A4-55				
232	A2-72	A6-62*	A7-26				
233	A2-66	A6-7Ø*	A7-29				
234	A2-84	A6-69*	A8-41				
235	A2-75	A6-75*	A8-38				
236	A2-76	A6-57*	A8-45				
237	A2-61	A4-54	A6-63*	A8-65			
238	A2-83	A3-17	A6-59*				
239	A1-9	A2-8Ø	A3-71	A4-24	A6-58*	A8-63	
240	A1-3	A2-79	A6-44#				
241	A1-7	A2-78	A6-49*				
242	A1-5	A2-81	A6-46*				
243	A1-12	A2-82	A6-45*				
244	A1-56*	A2-52					
254	A2-69	A4-18#					
335	A1-8*	A2-70	A4-30	A6-9	A7-20	A8-75	
	A107-82						
346	A2-58	A4-82*					
347	A2-57	A3-12*					
348	A1-75*	A2-56					
369	A1-71	A2-41	A4-17#				
441	A2-77#	A3-84	A4-81	A6-6*			
446	A1-31*	A2-74					
447	A1-34*	A2-73	A8-72				
448	A1-35#	A2-55					
452	A1-61*	A2-60					
474	A1-36*	A2-59	A3-18				



NOTES: RESISTANCE VALUES ARE IN OF ARE IN UF UNLESS OTHERWISE

FF DEFINI

LEP = LEGAL E NER = NON-EX

ALL PIN NUMBERS REFER TO 86 WISE INDICATED.

NUMERALS WITHIN BRACKETS | NUMBERS.

U25, U26, U27, U35, U37, AND U6 ROM CONTROL CARD. THESE IC POINT CAPABILITY OR OTHER F

PRINTED CIRCUIT TRACE TO PIN

R73 AND U81B NOT USED ON RE REVISIONS CONNECTED AS SHO

JUMPER CONNECTIONS FOR VAI

Modules Installed	W1	W2
0	A to B	D to k
0, 1	A to B	None
0, 2	None	Dtok
0, 3	A to B	C to D
0, 1, 2	A to D	None
0, 1, 3	A to B	None
0, 2, 3	None	C to D
0, 1, 2, 3	None	None

2. U25, U26, U27, U35, U37, AND U65 USED ONLY FOR OPTIONS SUCH AS FLOATING - POINT CAPABILITY.

3. R73 FIRST USED ON CARD REV. C-1144-22.

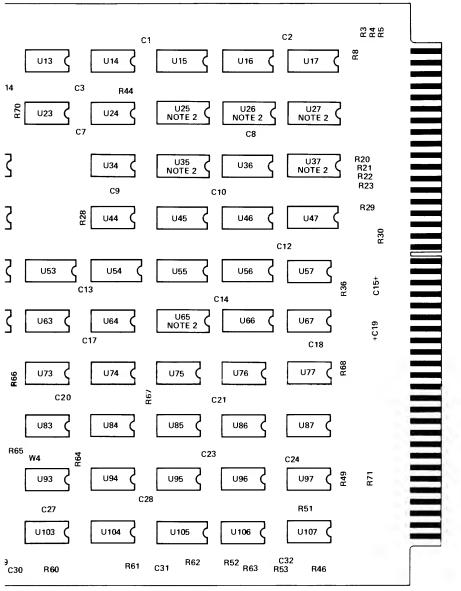


DIAGRAM ALSO APPLIES TO CARD REV. A-1106-22 AND !-22.

126, U27, U35, U37, AND U65 USED ONLY FOR OPTIONS SUCH OATING \cdot POINT CAPABILITY

IRST USED ON CARD REV. C-1144-22.

FF DEFINITIONS

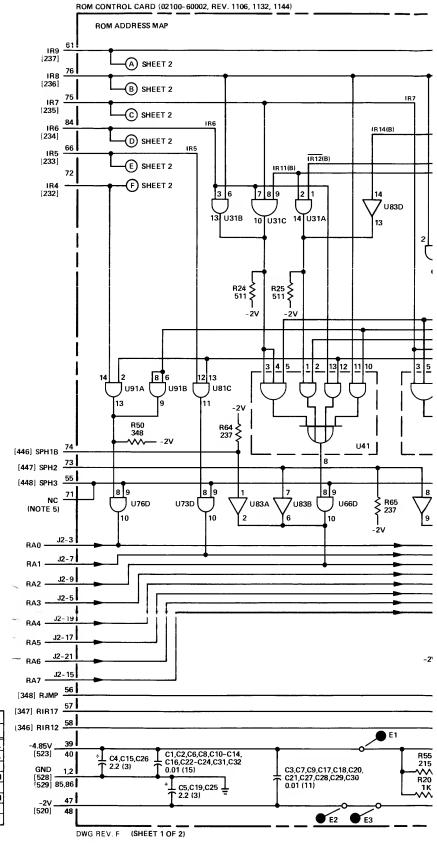
LEP = LEGAL ENTRY POINT

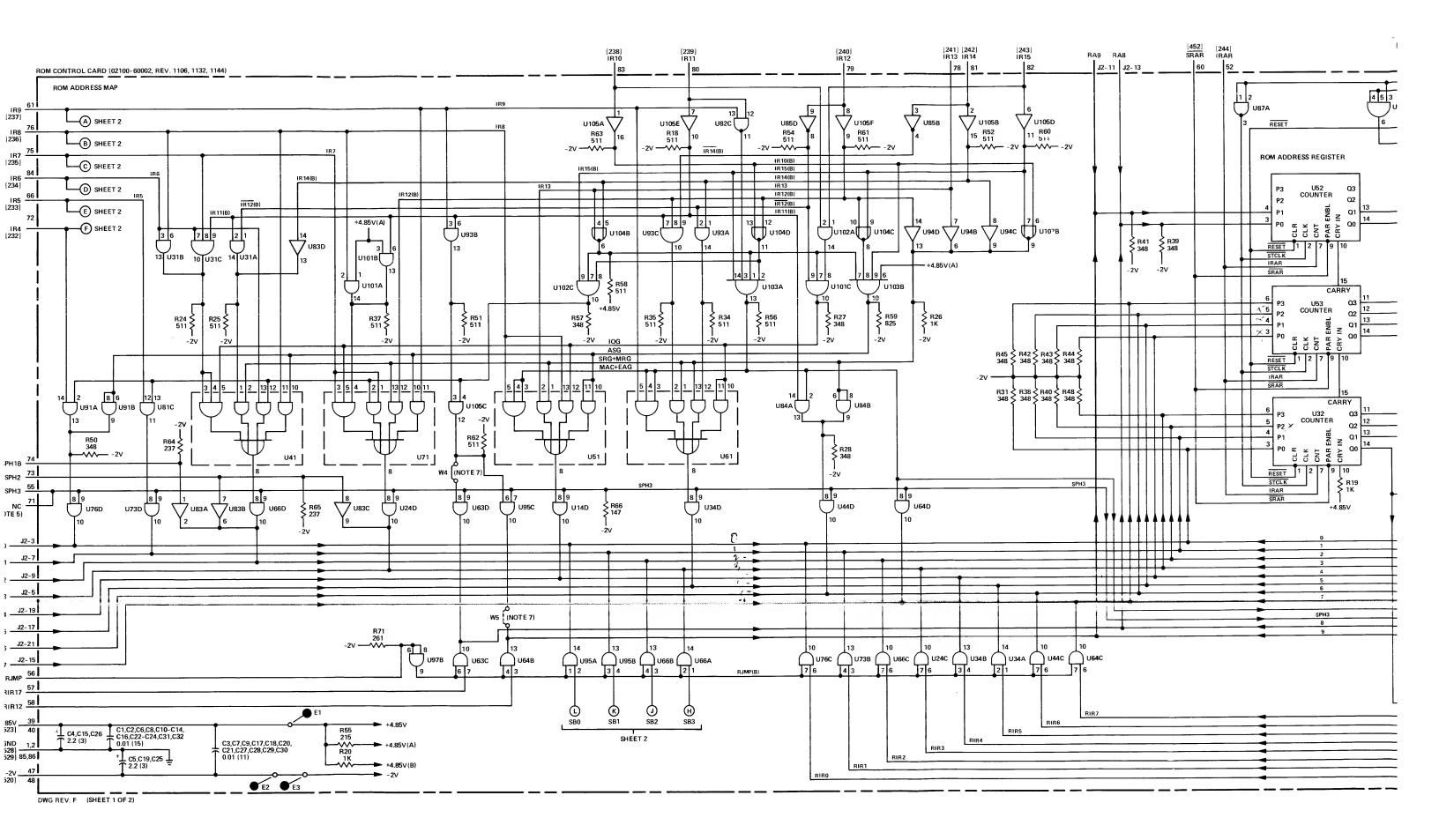
NER = NON-EXTENT ROM

NOTES:

- RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.
- ALL PIN NUMBERS REFER TO 86-PIN CONNECTOR UNLESS OTHERWISE INDICATED.
- MUMERS.
- U25, U26, U27, U35, U37, AND U65 ARE NOT USED ON STANDARD ROM CONTROL CARD. THESE ICs ARE USED FOR FLOATING POINT CAPABILITY OR OTHER FUTURE OPTIONS.
- PRINTED CIRCUIT TRACE TO PIN 71 NOT ON CARD REV. 1106.
- R73 AND U81B NOT USED ON REVISIONS PRIOR TO 1144; EARLIER REVISIONS CONNECTED AS SHOWN BY DASHED LINE.
- JUMPER CONNECTIONS FOR VARIOUS MODULE CONFIGURATIONS:

	Jumpers to be Installed								
Modules Installed	W1	W2	W 3	W4	W5	W 6			
0	A to B	D to K	E to F	Х	None	H to L			
0, 1	A to B	None	None	Х	None	H to L			
0, 2	None	D to K	E to F	None	Х	None			
0, 3	A to B	C to D	E to F	Х	X	G to H			
0, 1, 2	A to D	None	E to F	X	None	None			
0, 1, 3	A to B	None	None	Х	None	G to H			
0, 2, 3	None	C to D	E to F	None	Х	None			
0, 1, 2, 3	None	None	None	х	None	None			





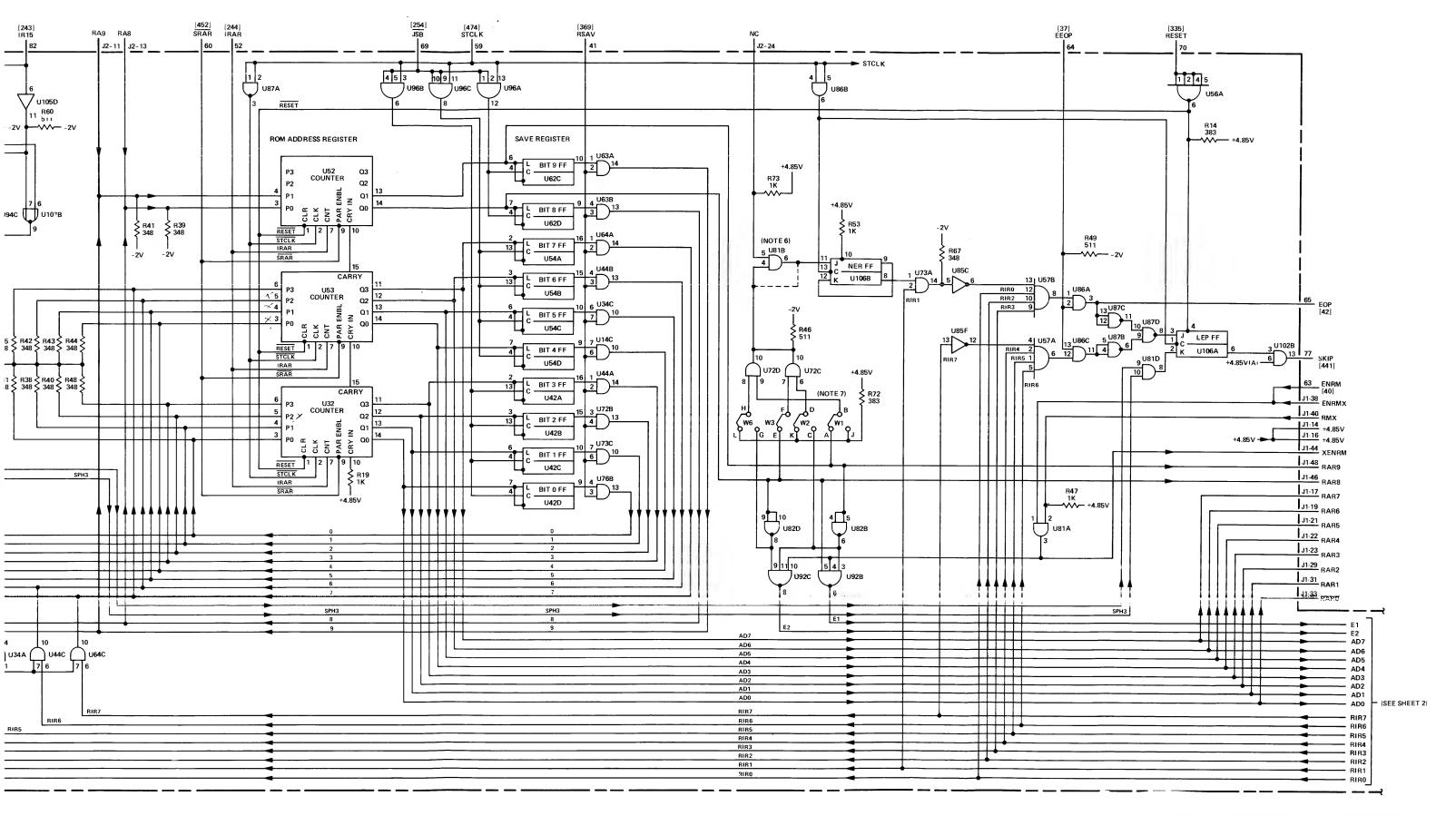
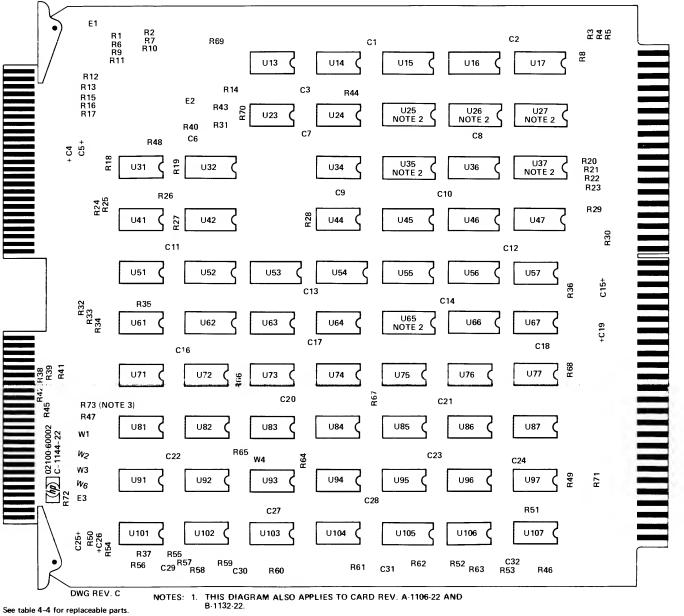


Figure 4-5. A2 ROM Control Card, Parts Location and Schematic Diagrams (Sheet 1 of 2)

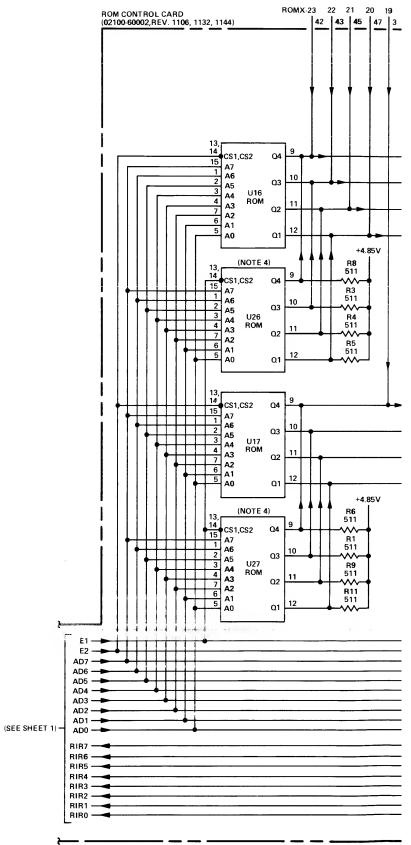
(Information continues on next page)

REF.		BACKPLANE	LOCATION	* I	NDICATES S	SIGNAL	SOURCE
A2							
4	A2-68	A3-16*					
16	A2-51	A3-13*					
29	A2-38	A3-15*					
202	A2-67	A3-3	A4-7*				
228	A2-42	A6-35*	A7-68				
229	A2-45	A6-36*	A7-63 A7-67				
230	A2-26 A2-50	A6-56* A6-34*	A7-30				
231 338	A2-32*	A6-16	A1 30				
339	A2-33*	A6-14					
340	A2-28*	A6-10					
341	A2-27*	A6-12					
342	A2-22*	A6-22					
343	A2-23*	A6-23					
344	A2-16*	A6-24					
345	A2-17#	A6-26					
349	A2-15*	A3-57					
350	A2-18#	A3-58					
351	A2-24#	A3-54					
352	A2-25*	A3-51					
353	A2-37*	A4-78					
354 355	A2-36* A2-35*	A4-77 A4-80					
356	A2-34*	A4-79					
357	A2-14#	A4-43					
358	A2-13#	A3-11					
359	42-8#	A3-14					
360	A2-7*	A3-4					
361	42-3*	A3-9					
362	A2-4*	A4-37					
363	A2-5*	A4-34					
364	A2-6#	A4-29 A5-78*	A6-32	A7-62*	A8-3*	A9-	16#
396	A2-46#	A3-76*	MO-32	A1-02"	A0 3		••
397	A107-16 A2-44#	A5-80#	A6-60	A7-61#	A8-4#	A9-	14#
37,	A107-18	A3 00	,,,,				
398	A2-29*	A5-76*	A6-61	A7-60*	A8-5*	A9-	18*
	A107-12						
399	A2-30*	A5-59#	A6-33	A7-59*	A8-6*	A9-	13*
	A107-14					4.0	
400	A2-19#	A5-52*	A6-65	A7-64*	A8-7*	A9-	12*
	A107-29				400#	A9-	1.0#
401	A2-20 *	A5-51*	A6-64	A7-57*	A8-8*	A 7 -	10~
4.00	A107-38	A5-49#	A6-67	A8-9#	A9-20*	A 1 0	7-20
402	A2-12# A2-9#	A5-43*	A6-66	A8-24*	A9-11#	_	7-22
403 404	A2-53#	A5-31*	A6-52	A8-14#	A9-5#		7-44
405	A2-54*	A5-32*	A6-51	A8-18*	A9-3#	AIØ	7-46
406	A2-43#	A5-29#	A6-54	A8-19#	A9-9#	A10	7-34
407	A2-49#	A5-30*	A6-53	48-20*	A9-7*	A10	7-36
408	A2-31*	A5-10#	A6-38	A8-21*	A9-8*		7-51
409	A2-21 *	A5-8*	A6-37	452-8A	A9-4*		7-42
410	A2-10+	A5-6*	A6-42	A8-23*	A9-6*		7-50
411	A1-14	A2-11*	A4-75	A5-4*	A6-41	A8-	33*
_	A9-84#	A107-52		A4-53	A4-74#		
454	A1-55	A2-62	A3-42	A4-52	A6-76*		

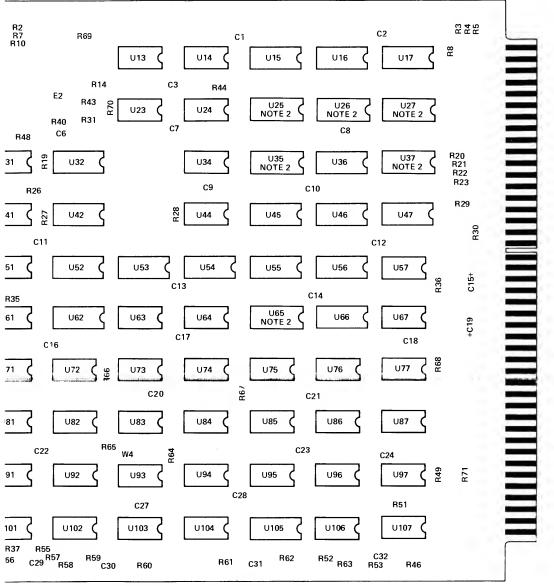


2. U25, U26, U27, U35, U37, AND U65 USED ONLY FOR OPTIONS SUCH AS FLOATING - POINT CAPABILITY.

3. R73 FIRST USED ON CARD REV. C-1144-22.

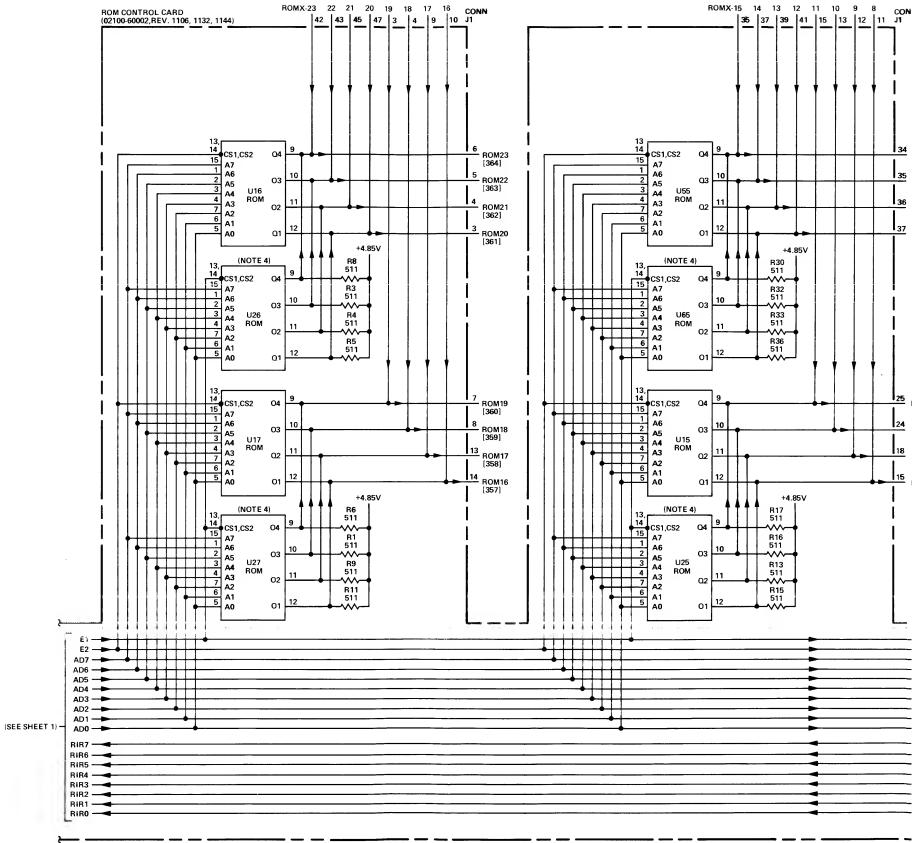


DWG REV. B (SHEET 2 OF 2) SEE SHEET 1 FOR NOTES

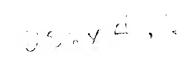


NOTES: 1. THIS DIAGRAM ALSO APPLIES TO CARD REV. A-1106-22 AND B-1132-22

3. R73 FIRST USED ON CARD REV. C-1144-22.



DWG REV. B (SHEET 2 OF 2) SEE SHEET 1 FOR NOTES



^{2.} U25, U26, U27, U35, U37, AND U65 USED ONLY FOR OPTIONS SUCH AS FLOATING - POINT CAPABILITY.

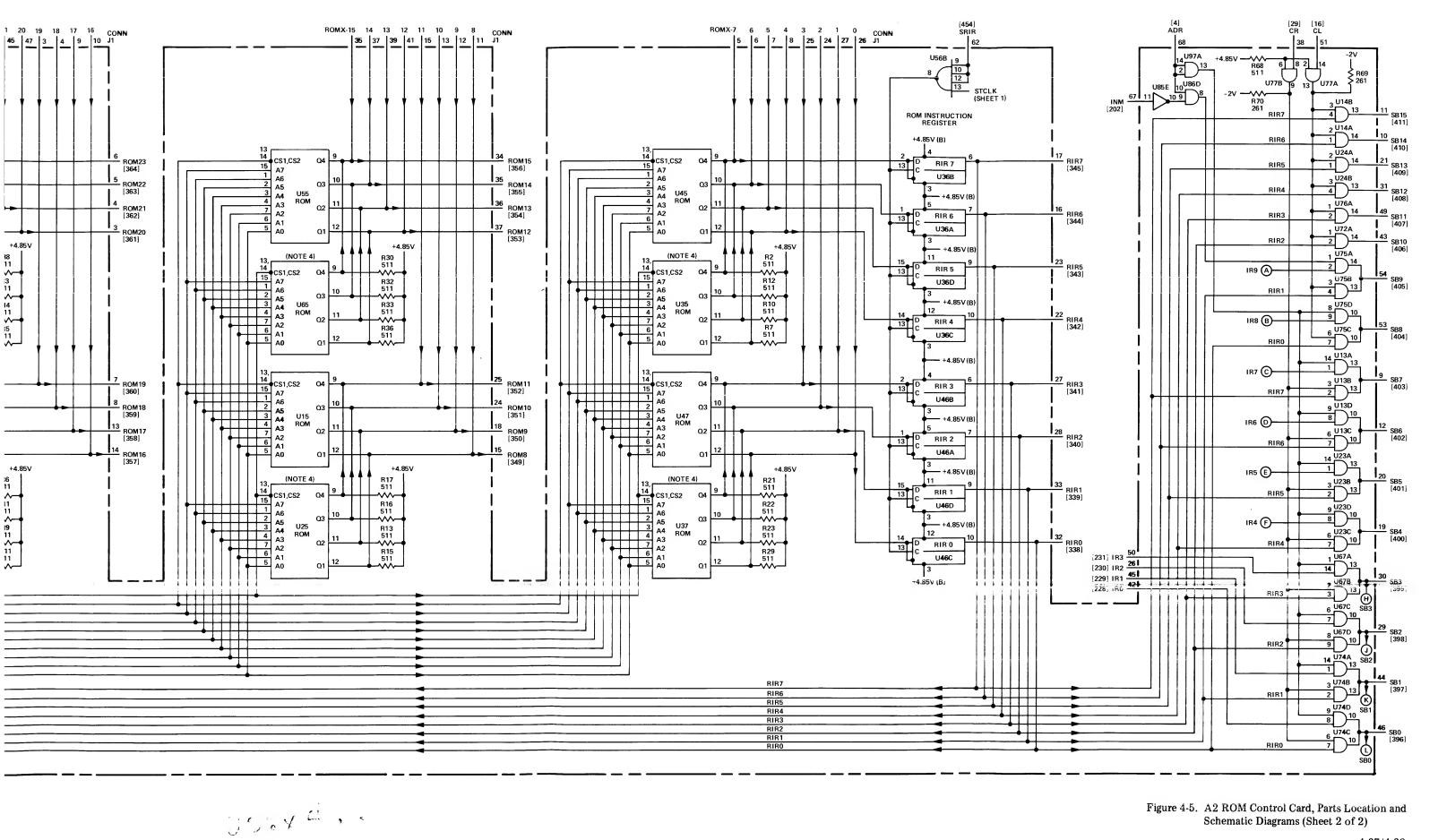


Figure 4-5. A2 ROM Control Card, Parts Location and Schematic Diagrams (Sheet 2 of 2)

4-37/4-38

Table 4-5. A3 Microinstruction Decoder 1 Card, Replaceable Parts

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A3 A3C1 A3C2 A3C3 A3C4	02100-60004 0180-0197 0160-2055 0180-0197 0180-0197	1 12 24	MICRO INSTRUCTION DECOGER 1 CARD . C:FXD ELECT 2.2 UF 10% 20VDCW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXD ELECT 2.2 UF 10% 20VDCW C:FXD ELECT 2.2 UF 10% 20VDCW	£8480 £6289 }.6289 £6289 £6289	02100-60004 150D225X9020A2-DYS C023F101F103E32-C0H 150D225X9020A2-OYS 150D225X9020A2-DYS
A3C5 A3C6 A3C7 A3C8 A3C9	0160-2055 0180-0197 0160-2055 0160-2055 0160-2055		C:FXO CER 0.01 UF +80-20% 100VDCW C:FXD ELECT 2.2 UF 10% 20VDCW C:FXD CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +80-20% 100VDCW	₹6289 ₹6289 ₹6289 ₹6289 ₹6289	C023F101F103Z522-C0H 150D225X9020A2-DYS C023F101F103Z522-C0H C023F101F103Z522-C0H C023F101F103Z522-C0H
A3C10 A3C11 A3C12 A3C13 A3C14	0160-2055 0160-2055 0160-2055 0180-2057 0180-0197		C:FXD CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +80-20% 100VDCW C:FXD ELECT 2.2 UF 10% 20VOCW C:FXO CER 0.01 UF +80-20% 100VDCW	\$6289 \$6289 \$6289 \$6289 \$6289	C023F101F103ZS22-C0H C023F101F103ZS22-C0H C023F101F103ZS22-C0H 150D225X9020A2-DYS C023F101F103ZS22-CDH
A3C15 A3C16 A3C17 A3C18 A3C19	0160-2055 0160-2055 0180-0197 0180-0197 0160-2055		C:FXD CER 0.01 UF +80-20% 100VDCW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXD ELECT 2.2 UF 10% 20VDCW C:FXD ELECT 2.2 UF 10% 20VDCW C:FXD CER 0.01 UF +80-20% 100VDCW	56289 56289 56289 56289 56289	C023F101F103ZS22-CDH C023F101F103ZS22-CDH 150D22SX9020A2-0YS 150D225X9020A2-0YS C023F101F103ZS22-CDH
A3C20 A3C21 A3C22 A3C23 A3C24	0160-2055 0160-2055 0180-0197 0160-2055 0160-2055		C:FXD CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +80-20% 100VDCW C:FXD ELECT 2.2 UF 10% 20V0CW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO CER 0.01 UF +80-20% 100VDCW	\$6289 \$6289 \$6289 \$6289	C023F101F103ZS22-C0H C023F101F103ZS22-C0H 150D225X9020A2-0YS C023F101F103ZS22-CDH C023F101F103ZS22-C0H
A3C25 A3C26 A3C27 A3C28 A3C29	0160-2055 0160-2055 0160-2207 0180-0197 0180-0197	1	C:FX0 CER 0.01 UF +80-20% 100VDCW C:FX0 CER 0.01 UF +80-20% 100VOCW C:FX0 MICA 300 PF 5% C:FX0 ELECT 2.2 UF 10% 20VOCW C:FX0 ELECT 2.2 UF 10% 20VOCW	\$6289 \$6289 \$8480 \$6289 \$6289	C023F101F103ZS22-CDH C023F101F103ZS22-COH 0160-2207 150D225X9020A2-DYS 150D225X9020A2-DYS
A3C30 A3C31 A3C32 A3C33 A3C34	0160-2055 0160-2055 0160-2055 0160-2055 0160-2055		C:FX0 CER 0.01 UF +80-20% 100VDCW C:FX0 CER 0.01 UF +80-20% 100VDCW C:FX0 CER 0.01 UF +80-20% 100VDCW C:FX0 CER 0.01 UF +80-20% 100VDCW C:FX0 CER 0.01 UF +80-20% 100VDCW	\$6289 \$6289 \$6289 \$6289 \$6289	C023F101F103ZS22-CDH C023F101F103ZS22-COH C023F101F103ZS22-COH C023F101F103ZS22-COH C023F101F103ZS22-CDH
A3C35 A3C36 A3C37 A3E1 THRU A3E6	0160-2055 0180-0197 0180-0197 0360-0294	6	C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO ELECT 2.2 UF 10% 20VDCW C:FXO ELECT 2.2 UF 10% 20VOCW TERMINAL:SOLOER POINT	\$62.89 \$52.89 \$52.89 \$34.80	C023F101F103ZS22-CDH 150D225X9020A2-DYS 150D225X9020A2-OYS 0360-0294
A3R1 A3R2 A3R3 A3R4	0757-0416 0757-0416 0698-0082 0757-0416	16 2	R:FXO MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 464 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W	23480 23480 23480 23480	0757-0416 0757-0416 0698-0082 0757-0416
A3R5 A3R6 A3R7 A3R8 A3R9	0757-0416 0757-0280 0757-0416 0698-3444 0757-0420	4 2 1	R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 316 OHM 1% 1/8W R:FXO MET FLM 750 OHM 1% 1/8W	2 34 80 234 80 234 80 234 80 2 34 80	0757-0416 0757-0280 0757-0416 0698-3444 0757-0420
A3R10 A3R11 A3R12 A3R13 A3R14	0698-3446 0757-0416 0757-0416 0698-3445 0757-0416	4	R:FXO MET FLM 383 OHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 348 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W	2 34 80 2 34 80 2 34 80 2 34 80 2 34 80	0698-3446 0757-0416 0757-0416 0698-3445 0757-0416
A3R15 A3R16 A3R17 A3R18 A3R19	0757-0416 0698-3132 0698-3132 0698-3132 0698-3446	4	R:FXD MET FLM 511 OHM 1% 1/8W R:FXO FLM 261 OHM 1% 1/8W R:FXO FLM 261 OHM 1% 1/8W R:FXO FLM 261 OHM 1% 1/8W R:FXO MET FLM 383 OHM 1% 1/8W	23480 23480 23480 23480 23480	0757-0416 0698-3132 0698-3132 0698-3132 0698-3446
A3R 20 A3R 21 A3R 22 A3R 23 A3R 24	0698-3132 0757-0416 0698-3446 0698-3444 0757-0416		R:FXO FLM 261 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 383 OHM 1% 1/8W R:FXO MET FLM 316 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W	28480 28480 28480 28480 28480	0698-3132 0757-0416 0698-3446 0698-3444 0757-0416
A3R 25 A3R 26 A3R 27 A3R 29 A3R 30	0757-0416 0757-0280 0757-0416 0698-0082 0757-0280		R:FXO MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 464 OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W	284 80 284 80 284 80 284 80 284 80	0757-0416 0757-0280 0757-0416 0698-0082 0757-0280
A3R31 A3R32 A3R33 A3R34 A3R35	0757-0416 0757-0427 0757-0403 0757-0403 0698-3446	4	R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 1-5K OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 383 OHM 1% 1/8W	244 80 244 80 244 80 244 80 284 80 28 80	0757-0416 0757-0427 0757-0403 0757-0403 0698-3446

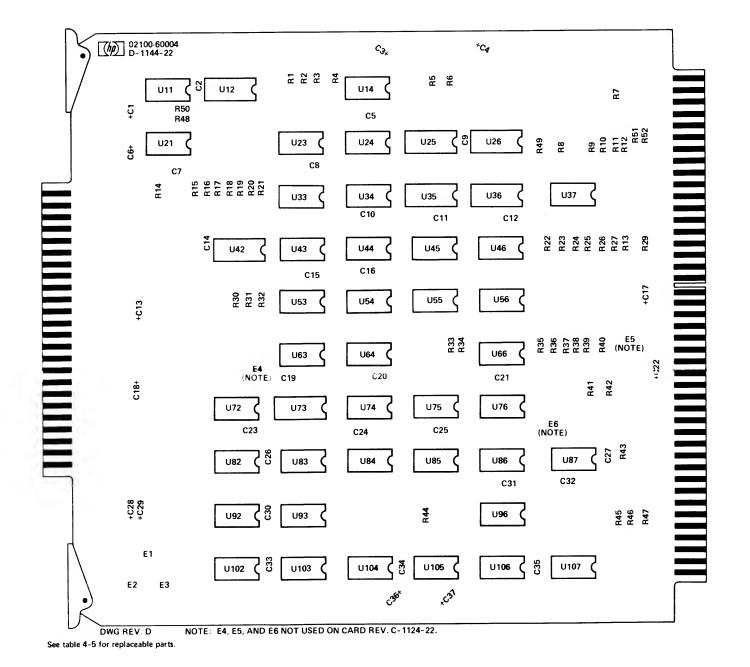
Table 4-5. A3 Microinstruction Decoder 1 Card, Replaceable Parts (Continuet)

Reference Designation	P Part Number	Qty	Description	Mfr Code	Mfr Part Number
A3R37 A3R38 A3R39	0698-3442 0698-3442 0757-0401 0757-0416 0698-3445	4 2	R:FXO MET FLM 237 OHM 1% 1/8W R:FXO MET FLM 237 OHM 1% 1/8W R:FXO MET FLM 100 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 348 OHM 1% 1/8W	2 84 80 2 84 80 2 84 80 2 84 80 2 84 80	0698-3442 0698-3442 0757-0401 0757-0416 0698-3445
A3R42 A3R43 A3R44	0757-0403 0757-0403 0757-0401 0698-3445 0757-0427		R:FXO MET FLM 121 DHM 1% 1/8W R:FXO MET FLM 121 DHM 1% 1/8W R:FXD MET FLM 100 DHM 1% 1/8W R:FXD MET FLM 348 DHM 1% 1/8W R:FXD MET FLM 1.5K DHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0403 0757-0403 0757-0401 0698-3445 0757-0427
A3R47 A3R48 A3R49	0757-0427 0757-0427 0757-0280 0757-0416 0698-3445		R:FXO MET FLM 1.5K OHM 1% 1/8W R:FXO MET FLM 1.5K OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 348 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0427 0757-0427 0757-0427 0757-0280 0757-0416 0698-3445
A3R52 A3U11(NOTE 1) A3U11(NOTE 2)	0698-3442 0698-3442 1820-0372 1820-0686 1820-0485	1 1 3	R:FXO MET FLM 237 OHM 1% 1/8W R:FXO MET FLM 237 OHM 1% 1/8W IC:TTL TRIPLE 3-INPT AND GATE IC:TTL SCHOTTKY TRIPLE 3-INPT ANO GATE IC:CTL HEX LEVEL RESTORER	28480 28480 28480 01295 07263	0698-3442 0698-3442 1820-0372 SN74S11N U68981649X
A3U21 A3U23 A3U24	1820-0512 1820-0966 1820-0953 1820-0512 1820-0482	3 1 1	IC:TTL OUAL O F/F IC:CTL OUAL 2-INPT ANO 2W ANO/OR GATE IC:CTL TRIPLE 2-2-3 INPT ANO GATE IC:TTL DUAL D F/F IC:CTL 1 OF 8 DECODER	Ū 1295 14433 14433 01295 07263	SN74H74N MIC 966 MIC 953 SN74H74N U68983849X
A3U33 A3U34 A3U35	1820-0482 1820-0955 1820-0965 1820-0485 1820-0485	1	IC:CTL 1 OF 8 OECOOER IC:CTL 8-INPT DUAL OUTPUT ANO GATE IC:CTL QUAO 1-INPT ANO GATE IC:CTL HEX LEVEL RESTORER IC:CTL HEX LEVEL RESTORER	0 7263 0 7263 0 7263 0 7263 0 7263	U68983849X U6A995579X U6A996579X U68981649X U68981649X
A3U42 A3U43 A3U44	1820-0186 1820-0424 1820-0383 1820-0380 1820-0186	10 3 1 1	IC:CTL DUAL 2-INPT AND GATE IC:TTL HS HEX INVERTER IC:TTL HS OUAL 4-INPT EXPANDER IC:TTL HS 4W 2-2-2-3 INPT ANO/OR INV IC:CTL OUAL 2-INPT ANO GATE	07263 04713 01295 01295 01263	U6A985649X SN74H04N SN74H60N SN74H50N U6A985649X
A3U53 A3U54 A3U55(NOTE 3)	1820-0186 1820-0512 1820-0370 1820-0451 1820-0141	4 1 4	IC:CTL OUAL 2-INPT AND GATE IC:TTL OUAL D F/F IC:TTL HS QUAO 2-INPT NAND GATE IC:TTL OUAL J-K F/F IC:TTL QUAO 2-INPT AND GATE	0/263 01295 01295 04713 04713	U6A985649X SN74H74N SN74H00N MC3062P MC3001P
A3U64 1 A3U66 1 A3U72 1	1820-0370 1820-0186 1820-0186 1820-0205 1820-0437	2 1	IC:TTL HS QUAO 2-INPT NANO GATE IC:CTL QUAL 2-INPT ANO GATE IC:CTL QUAL 2-INPT ANO GATE IC:TTL QUAO 2-INPT OR GATE IC:TTL QUAO 0 F/F	01295 07263 07263 23480 04713	SN74H00N U6A985649X U6A985649X 1820-0205 MC4015P
A3U75 1 A3U76 1 A3U82 1	1820-0370 1820-0186 1820-0186 1820-0205 1820-0608	2	IC:TTL HS QUAO 2-INPT NANO GATE IC:CTL DUAL 2-INPT ANO GATE IC:CTL OUAL 2-INPT ANO GATE IC:TTL QUAO 2-INPT OR GATE IC:TTL 1 OF OECODER W/ENABLE	01295 07263 07263 28480 04713	SN74H00N U6A985649X U6A985649X 1820-0205 MC4006P
A3U85 1 A3U86 1 A3U87 1	1820-0141 1820-0186 1820-0186 1820-0141 1820-0376	2	IC:TTL QUAO 2-INPT ANO GATE IC:CTL OUAL 2-INPT ANO GATE IC:CTL OUAL 2-INPT ANO GATE IC:TTL QUAO 2-INPT ANO GATE IC:TTL QUAO 4-INPT NANO POWER GATE	0+713 07263 07263 04713 01295	MC 3001 P U6A9 8564 9X U6A9 8564 9X MC 3001 P SN 7414 0N
A3U102(NOTE 1) 1 A3U102(NOTE 2) 1	1820-0608 1820-0186 1820-0424 1820-0683 1820-0424	1	IC:TTL 1 OF OECODER W/ENABLE IC:CTL OUAL 2-INPT ANO GATE IC:TTL HS HEX INVERTER IC:TTL HS HEX INVERTER IC:TTL HS HEX INVERTER	0 ¹ / ₂ +713 01:263 0 ¹ / ₂ -713 0 ¹ / ₂ -713 0 ¹ / ₂ -713	MC4006P U6A985649X SN74H04N SN74S04N SN74H04N
A3U105 1 A3U106 1	1820-0376 1820-0370 1820-0141 1820-0371	1	IC:TTL DUAL 4-INPT NAND POWER GATE IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL QUAO 2-INPT ANO GATE IC:TTL HS TRIPLE 3-INPT NANO GATE	01295 02295 04713 02295	SN74H40N SN74H00N MC3001P SN74H10N
NOTES: 1. Used on card re					

NOTES: 1. Used on card rev. 1124 only,
2. First used on card rev. 1144.
3. Part no. 1820-0695 used on some cards; the two parts are interchangeable.

055				# TN	DICATES SIGNAL SOURCE
REF.		BACKPLANE	LOCATION	- 10	DICATES SIGNAL SOUNCE
A3					
2 3	A3-52 A3-66*	A6-5* A4-21			
4	A2-68	A3-16*			
13	A3-43	A4-32	A6-7*		
16	A2-51	A3-13*			
20	A1-72*	A3-79	43.54	40-42	A9-76 A24-64
22	Al-78* Al07-69	A3-81	A7-56	A8-42	A9-76 A24-64
26	A3-20*	A4-11			
27	A3-50	A4-56	A5-19*	A6-11	
29	A2-38	A3-15*			
34	A3-83	A4-58* A24-76	A107-81*		
35 3 7	A3-25 A2-64	A3-68*	A101-01-		
41	A3-61*	A6-15			
55	A1-8Ø	A3-35*	A6-43		
57	A3-75	A7-9*	A4-7*		
202 222	A2-67 A3-76	A3-3 A7-43	A8-46*	A9-45*	A10-15 THRU A23-15
222	A24-6	77 43		,	
226	A3-77	A8-78#	A9-32	A24-10	A10-20 THRU A23-20
238	A2-83	A3-17	A6-59* A3-71	A4-24	A6-58* A8-63
239 253	A1-9 A3-36	A2-80 A4-49*	A3-71	44-24	40-30° A0 03
258	A3-29	A24-78	A107-77*		
276	A3-59	A4-60#			
295	A1-63	A3-27	A8-58*		
300	A3-41*	A7-13 A4-28	A24-56 A24-38*		
302 303	A3-60 A3-72	A4-26	A24-41*		
304	A3-32	A24-36#			
332	A3-33*	A7-54			
333	A3-19#	A6-81	44 27	40-21#	A24-77# A107-72
334 337	A1-54* A3-34*	A3-28* A8-61	A4-27 A9-42*	A9-31*	A24-11- A101-12
347	A2-57	A3-12*	A) 45.		
349	A2-15*	A3-57			
350	A2-18#	A3-58			
351 352	A2-24* A2-25*	A3-54 A3-51			
358	A2-13#	A3-11			
359	A2-8*	A3-14			
360	A2-7#	A3-4			
361	A2-3* A3-21*	A3 - 9 A5 - 27			
365 366	A3-21*	A5-28			
367	A3-6*	A5-57			
368	A3-24*	A4-57*	A5-35,36	A24-23*	
370	A3-10*	A5-17			
371 372	A3 -7* A3 - 5*	A5-15 A5-13			
373	A3-8*	A5-11			
377	A3-31	A6-27#			
395	A3-67*	A5-77			
413 431	A3-73 A1-53*	A7-44* A3-22*	A8-35 A8-60	A9-35*	A24-42* A107-66
432	A3-30*	A4-59#	A9-41*	A107-74	ALT IL ALD, SS
434	A3-74*	A5-82			
437	A3-78	A4-83*	40-225	494-75 *	
438 441	A3-46* A2-77*	A8-62 A3-84	A9-33* A4-81	A24-75* A6-6*	
442	A3-65	A4-6	A6-71*	40 Q.	
449	A3-38	A9-46*			
450	A3-70*	A5-75			
451 454	A3-62	A4-12	A6-72# A3-42	A4-52	A6-76*
454 471	A1-55 A3-69*	A2-62 A5-81	MJ-46	M7-J6	40 10°
472	A3-63*	A5-79			
474	A1-36*	A2-59	A3-18		
476	A3-44*	A6-30	A 24 - 72	A107-73	
477	A3-53*	A9-38*	A24-73	AIW!=13	

REF.		BACKPLANE	LOCATION	*	INDICATES	SIGNAL	SOURCE
A3 (C)	ONT)						
478	A3-82*	A5-84					
479	A3-64*	A5-63					
480	A3-80*	A5-73					
483	A3-26	A7-58	A8-43*	A9-81	A24-66		
489	A3-55*	A5-65					
490	A3-56*	A5-67					
491	A3-45*	A5-69					
492	A3-49*	A5-71					
498	A3-37	A7-11	A8-81*	A9-26			



= DIVIDE TIME 6 = HOLD I/O TIME 6

PH5 = PHASE 5

RIR 8 = ROM INSTRUCTION REGISTER BIT I

RIR 9 ' = ROM INSTRUCTION REGISTER BIT !

RIR 10 = ROM INSTRUCTION REGISTER BIT

RIR 11 = ROM INSTRUCTION REGISTER BIT

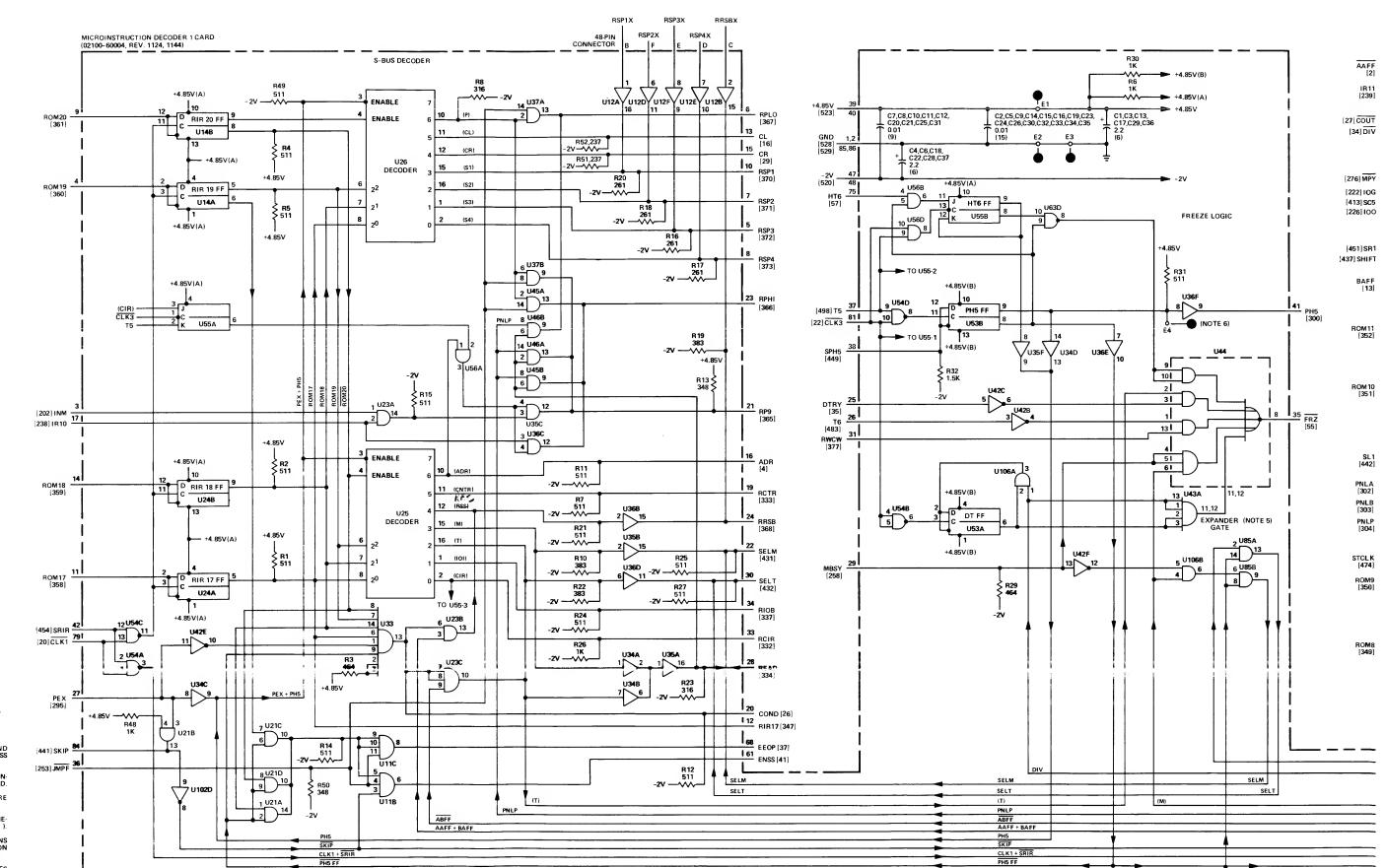
RIR 17 = ROM INSTRUCTION REGISTER BIT

RIR 18 = ROM INSTRUCTION REGISTER BIT

RIR 19 = ROM INSTRUCTION REGISTER BIT
RIR 20 = ROM INSTRUCTION REGISTER BIT

NOTES:

- RESISTANCE VALUES ARE IN OHN
 CAPACITANCE VALUES ARE IN UF
 OTHERWISE SPECIFIED.
- 2. ALL PIN NUMBERS REFER TO 86-PI NECTOR UNLESS OTHERWISE INDI
- NUMERALS WITHIN BRACKETS [WIRING LIST REFERENCE NUMBERS.
- 4 DECODED ROM MICROINSTRUCTION MONICS APPEAR IN PARENTHESI
- SIMPLIFIED EXPANDER GATE CONNE SHOWN. SEE LOGIC SYMBOLOGY S FOR DETAILED CONNECTIONS.
- 6. TEST POINT TERMINALS E4, E5, , NOT USED ON CARD REV. 1124.



DT = DIVIDE TIME HT6 = HOLD I/O TIME 6

= PHASE 5

= ROM INSTRUCTION REGISTER BIT 8 = ROM INSTRUCTION REGISTER BIT 9

ROM INSTRUCTION REGISTER BIT 10

= ROM INSTRUCTION REGISTER BIT 11

RIR 17 = ROM INSTRUCTION REGISTER BIT 17

RIR 18 = ROM INSTRUCTION REGISTER BIT 18

RIR 19 = ROM INSTRUCTION REGISTER BIT 19

RIR 20 = ROM INSTRUCTION REGISTER BIT 20

RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.

ALL PIN NUMBERS REFER TO 86-PIN CON-NECTOR UNLESS OTHERWISE INDICATED.

NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.

DECODED ROM MICROINSTRUCTION MNE-MONICS APPEAR IN PARENTHESIS ().

SIMPLIFIED EXPANDER GATE CONNECTIONS SHOWN. SEE LOGIC SYMBOLOGY SECTION FOR DETAILED CONNECTIONS.

TEST POINT TERMINALS E4, E5, AND E6 NOT USED ON CARD REV. 1124.

DWG REV. B

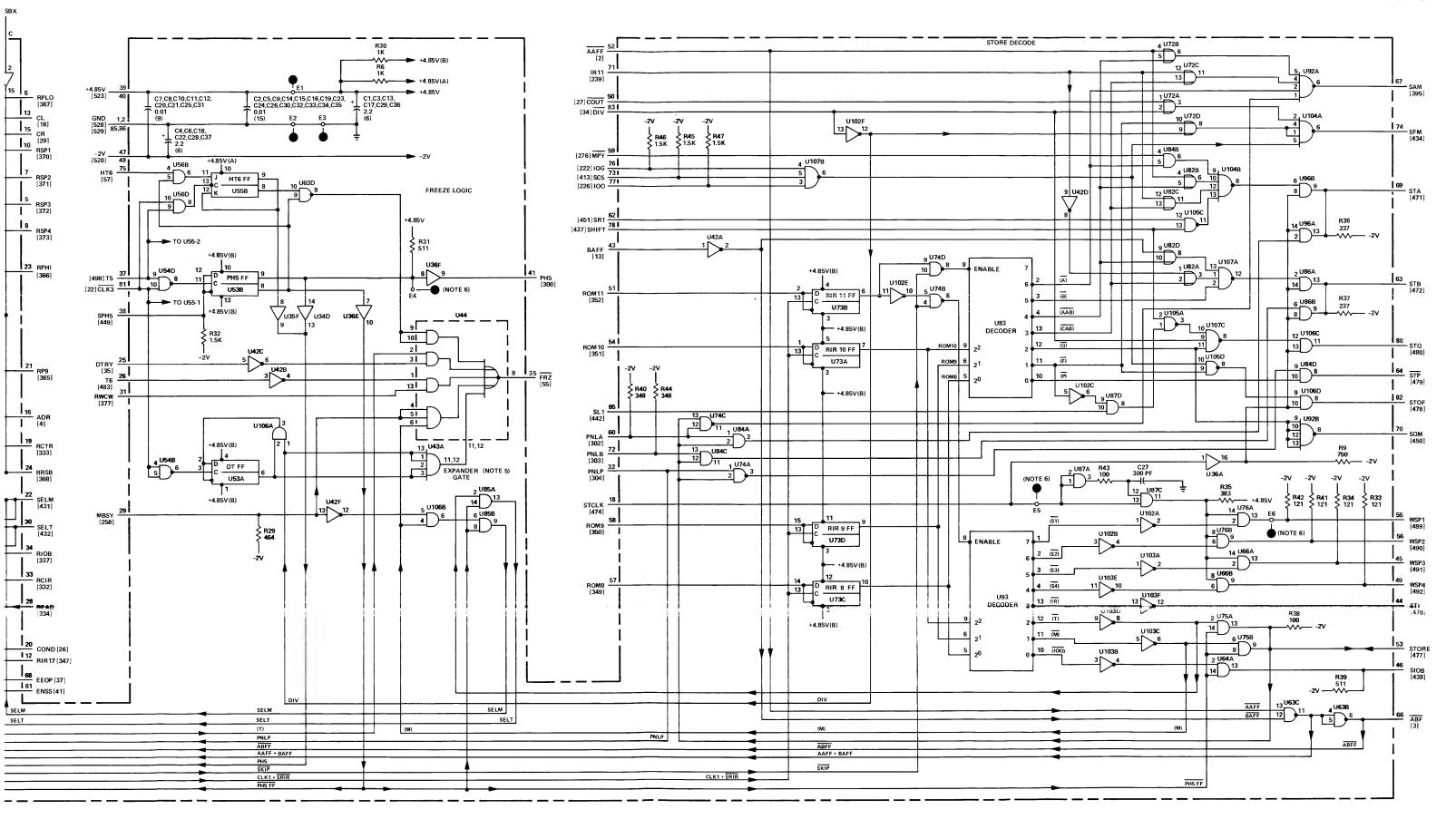


Figure 4-6. A3 Microinstruction Decoder 1 Card, Parts Location and Schematic Diagrams

Table 4-6. A4 Microinstruction Decoder 2 Card, Replaceable Parts

HP Part Number	Qty	Description	Mfr Cotle	Mfr Part Number
02100-60022 OR 02100-60112 0180-0197 0180-0197 0160-2055	1 10 20	MICRO INSTRUCTION DECODER 2 CARD MICRO INSTRUCTION OECODER 2 CARD C:FXD ELECT 2.2 UF 10% 20VOCW C:FXD CELCT 2.2 UF 10% 20VOCW C:FXD CER 0.01 UF +80-20% 100VOCW	28년 0 28년(10 56조년 56조년 56조년 56조년	02100-60022 02100-60112 1500225X9020A2-DYS 1500225X9020A2-OYS C023F101F103ZS22-C0H
0180-0197 0180-0197 0160-2055 0160-2055 0160-2055		C:FXO ELECT 2.2 UF 10% 20V0CW C:FXO ELECT 2.2 UF 10% 20V0CW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO CER 0.01 UF +80-20% 100VDCW	56 2 89 56 2 89 56 2 89 56 2 89 56 2 89	1500225X9020A2-0YS 1500225X9020A2-0YS C023F101F103Z522-C0H C023F101F103Z522-C0H C023F101F103Z522-CDH
0160-2055 0160-2055 0160-2055 0160-2055 0160-2055		C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO CER 0.01 UF +80-20% 100VDCW	56239 56239 56239 56239 56239	C023F101F103ZS22-CDH C023F101F103ZS22-CDH C023F101F103ZS22-COH C023F101F103ZS22-CDH C023F101F103ZS22-CDH
0160-2055 0180-0197 0180-0197 0160-2055 0160-2055		C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO ELECT 2.2 UF 10% 20VOCW C:FXO ELECT 2.2 UF 10% 20VOCW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO CER 0.01 UF +80-20% 100VDCW	56239 56239 56239 56239 56239	C023F101F103ZS22-C0H 150D225X9020A2-DYS 150D225X9020A2-OYS C023F101F103ZS22-C0H C023F1)1F103ZS22-CDH
0160-2055 0160-2055 0160-2055 0160-2055 0160-2055		C:FXO CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +80-20% 100VDCW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VOCW	56조89 56조89 56조89 56조89 56조89	C023F101F103ZS22-CDH C023F101F103ZS22-CDH C023F101F103ZS22-CDH C023F101F103ZS22-CDH C023F101F103ZS22-CDH
0160-2055 0160-2055 0180-0197 0180-0197 0160-2055		C:FXD CER 0.01 UF +80-20% 100V0CW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO ELECT 2.2 UF 10% 20V0CW C:FXO ELECT 2.2 UF 10% 20V0CW C:FXO CER 0.01 UF +80-20% 100V0CW	56 초: 9 56조: 9 56조: 9 56조: 9 56조: 9	C023F101F103ZS22-CDH C023F101F103ZS22-CDH 1500225X9020A2-DYS 1500225X9020A2-DYS C023F101F103ZS22-CDH
0180-0197 0180-0197 0360-0294 0360-0294 0360-0294	3	C:FXD ELECT 2.2 UF 10% 20VOCW C:FXO ELECT 2.2 UF 10% 20VDCW TERMINAL:SCLDER POINT TERMINAL:SOLDER POINT TERMINAL:SOLDER POINT	56 左 9 56 左 9 2 8 4 第 0 2 8 4 第 0 2 8 4 第 0	1500225X9020A2-0YS 1500225X9020A2-DYS 0360-0294 0360-0294 0360-0294
0757-0427 0757-0280 0757-0280 0757-0416 0757-0416	9 5 6	R:FXD MET FLM 1.5K OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W	284第〇 284第〇 284第〇 284第〇 284第〇	0757-0427 0757-0280 0757-0280 0757-0416 0757-0416
0698-3446 0757-0274 0698-3443 0757-0416 0757-0284	2 1 2	R:FXD MET FLM 383 OHM 1% 1/8W R:FXO MET FLM 1.21K OHM 1% 1/8W R:FXO MET FLM 287 OHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 150 OHM 1% 1/8W	284季() 284季() 284章() 284季() 284章()	0698-3446 0757-0274 0698-3443 0757-0416 0757-0284
0757-0284 0757-0399 0757-0416 0757-0280 0757-0427	1	R:FXO MET FLM 150 CHM 1% 1/8W R:FXD MET FLM 82.5 CHM 1% 1/8W R:FXO MET FLM 511 CHM 1% 1/8W R:FXO MET FLM 1K CHM 1% 1/8W R:FXO MET FLM 1.5K CHM 1% 1/8W	284年(0 284年(0 284年(0 284年(0 284年(0	0757-0284 0757-0399 0757-0416 0757-0280 0757-0427
0757-0420 0757-0416 0757-0280 0757-0416 0698-3446	1	R:FXO MET FLM 750 OHM 1% 1/8W R:FXO MET FLM 511 GHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 383 OHM 1% 1/8W	284%0 284%0 284%0 284%0 284%0 284%0	0757-0420 0757-0416 0757-0280 0757-0416 0698-3446
0698-3443 0757-0280 0757-0427 0698-3445	1	R:FXD MET FLM 287 OHM 1% 1/8W R:FXO MET FLM 1K UHM 1% 1/8W R:FXO MET FLM 1.5K OHM 1% 1/8W R:FXO MET FLM 348 OHM 1% 1/8W	284¥ () 284¥ () 284¥ () 284¥ ()	0698-3443 0757-028U 0757-0427 0698-3445
0757-0427 0757-0427 0757-0427 0757-0427 0757-0427		R:FXO MET FLM 1.5K OHM 1% 1/8W R:FXO MET FLM 1.5K OHM 1% 1/8W R:FXO MET FLM 1.5K OHM 1% 1/8W R:FXO MET FLM 1.5K OHM 1% 1/8W R:FXO MET FLM 1.5K OHM 1% 1/8W	284½0 284½0 284½0 284½0 284½0	0757-0427 0757-0427 0757-0427 0757-0427 0757-0427
0757-0427 1820-0379 1820-0424 1820-0605 1820-0512	7 4 1 5	R:FXO MET FLM 1.5K OHM 1% 1/8W IC:TTL HS 4W 2-2-2-3 INPT ANO/OR GATE IC:TTL HS HEX INVERTER IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL DUAL O F/F	284%0 012%5 047%3 012%5 012%5	0757-0427 SN74H52N SN74H04N SN74H01N SN74H174H
1820-0379 1820-0966 1820-0186	2 6	IC:TTL HS 4W 2-2-2-3 INPT AND/OR GATE IC:CTL OUAL 2-INPT AND 2W ANO/OR GATE IC:CTL OUAL 2-INPT AND GATE IC:TTL HS QUAO 2-INPT NAND GATE	012\$5 072\$3 072\$3 012\$5	SN74H52N U6A996679X U6A985649X
	02100-60022 OR 02100-60112 0180-0197 0180-0197 0180-0197 0180-0197 0180-0197 0180-02055 0160-205	02100-60022 OR 1 02100-60112 0180-0197 10 0180-0197 10 0180-0197 0160-2055 20 0180-0197 0160-2055 0160-205	02100-60022 OR 02100-60112 10 MICRO INSTRUCTION DECODER 2 CARD 02100-60112 10 GCFXO ELECT 2.2 UF 10X 20VOCW 0160-2055 20 CCFXO ELECT 2.2 UF 10X 20VOCW 0180-0197 0160-2055 1060-	

i.		

Table 4-6. A4 Microinstruction Decoder 2 Card, Replaceable Parts (Continued)

1820-0370 1820-0379 1820-0379 1820-0379 1820-0375 1820-0379 1820-0186 1820-0186 1820-0379 1820-0372 1820-0372 1820-0371 1820-0512 1820-0512 1820-0512 1820-0514 1820-0971 1820-0971 1820-09066 1820-0186 1820-0379 1820-0379 1820-0370 1820-0370 1820-0370 1820-0370 1820-0370 1820-0370 1820-0370 1820-0370 1820-0370 1820-0384 1820-0424 1820-0384	1 2 1 1 1 1 2 2 1 3 1 1 1	IC:TTL HS QUAD 2-INPT NANO GATE IC:CTL TRIPLE 2-2-3 INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL HS 4W 2-2-2-3 INPT ANO/OR GATE IC:TTL HS 8-INPT NANO GATE IC:TTL SHS DUAL J-K F/F W/PRESET IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL HS 4W 2-2-2-3 INPT AND/OR GATE IC:TTL TRIPLE 3-INPT AND GATE IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL QUAD 2-INPT AND/OR/INV GATE IC:CTL DUAL 2W 2-INPT AND/OR GATE IC:CTL DUAL 2W 1-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL HS 4W 2-2-2-3 INPT ANO/OR GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS HEX INVERTER IC:TTL HS HEX INVERTER IC:TTL HS HEX INVERTER IC:TTL HS HEX INVERTER IC:TTL HS TRIPLE 3-INPT EXPANDER IC:TTL HS TRIPLE 3-INPT EXPANDER IC:TTL HS TRIPLE 3-INPT EXPANDER IC:TTL HS TRIPLE 3-INPT EXPANDER	01.295 07.263 07.263 01.295	SN74HOON U6A995379X U6A985649X SN74H52N SN74H52N SN74H52N SN74H513N U6A985649X U6A995479X U6A9986649X SN74H52N 1820-0372 SN74H52N SN74H74N SN74H74N SN74H74N MC3001P U6A997179X U6A996679X U6A996679X U6A985649X SN74H50N SN74H10N SN74H10N SN74H0ON SN74H0ON SN74H0ON SN74H0ON SN74H0ON SN74H0ON SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N
1820-0186 1820-0954 1820-0379 1820-0379 1820-0375 1820-0512 1820-0512 1820-0512 1820-0141 1820-0971 1820-0966 1820-0186 1820-0379 1820-0379 1820-0370 1820-0370 1820-0370 1820-0370 1820-0370 1820-0370 1820-0380 1820-0380 1820-0380 1820-0424 1820-0380 1820-0424 1820-0380 1820-0424 1820-0380 1820-0424 1820-0390 1820-0424 1820-0390 1820-0424 1820-0390 1820-0424 1820-0424 1820-0390 1820-0424	1 4 1 2 2 1 3 1	IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 4-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL HS 4W 2-2-2-3 INPT AND/OR GATE IC:TTL HS 8-INPT NAND GATE IC:TTL TRIPLE 3-INPT AND GATE IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL DUAL 2W 2-INPT AND/OR/INV GATE IC:CTL DUAL 2W 2-INPT AND/OR GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL DUAL 2-INPT AND GATE IC:TTL HS 4W 2-2-2-3 INPT AND/OR GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL GUAD 2-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS WAS 2-10-2-3 INPT AND/OR/INV GATE IC:TTL HS 4W 2-2-2-3 INPT AND/OR/INV GATE IC:TTL HS 4W 2-2-2-3 INPT AND/OR/INV GATE IC:TTL HS HEX INVERTER IC:TTL HS HEX INVERTER IC:TTL HS HEX INVERTER IC:TTL HS TRIPLE 3-INPT EXPANDER IC:TTL HS TRIPLE 3-INPT EXPANDER IC:TTL TRIPLE 3-1 INPT AND GATE IC:TTL TRIPLE 3-3-1 INPT AND GATE IC:TTL TRIPLE 3-3-1 INPT AND GATE IC:TTL TRIPLE 3-3-1 INPT AND GATE	07:63 07:63 07:63 07:63 01:95 01:95 01:95 01:95 01:95 04:13 07:63 07:63 07:63 07:63 07:63 04:13 04:13 04:13 04:13 04:13 04:13	U6A985649X U6A995479X U6A995479X U6A995479X U6A985649X SN74H52N 1820-0372 SN74H30N SN74H74N SN74H74N SN74H74N MC3001P U6A997179X U6A996679X U6A996679X U6A985649X SN74H52N SN74H10N SN74H00N MC3001P SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N SN74H04N
1820-0375 1820-0512 1820-0512 1820-0512 1820-0141 1820-0971 1820-0966 1820-0186 1820-0379 1820-0371 1820-0371 1820-0370 1820-0141 1820-0370 1820-0424 1820-0380 1820-0608 1820-0608 1820-0608 1820-0508 1820-0508	1 4 1 2 2	IC:TTL HS 8-INPT NAND GATE IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL QUAD 2-INPT AND GATE IC:CTL DUAL 2W 2-INPT AND/OR GATE IC:CTL DUAL 2-INPT AND 2W AND/OR GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL HS 4W 2-2-2-3 INPT ANO/OR GATE IC:TTL HS TRIPLE 3-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS WE 2-2-2-3 INPT AND/OR/INV GATE IC:TTL HS 4W 2-2-2-3 INPT AND/OR/INV GATE IC:TTL HS 4W 2-2-2-3 INPT AND/OR/INV GATE IC:TTL HS 4W 2-2-2-3 INPT AND/OR/INV GATE IC:TTL HS HS INVERTER IC:TTL HS HS INVERTER IC:TTL HS TRIPLE 3-INPT EXPANDER IC:TTL B TRIPLE 3-INPT EXPANDER IC:TTL TRIPLE 3-1 INPT AND GATE IC:TTL TRIPLE 3-3-1 INPT AND GATE IC:TTL TRIPLE 3-3-1 INPT AND GATE	28480 01'95 01'95 01'95 01'95 04'13 07'63 07'63 07'63 01'95 01'95 04'13 04'13 01'95 01'95 01'95 01'95	1820-0372 SN74H30N SN74H74N SN74H74N SN74H74N MC3001P U6A997179X U6A986679X U6A986649X SN74H52N SN74H10N SN74H00N MC3001P SN74H00N SN74H00N SN74H00N SN74H00N SN74H00N SN74H00N SN74H04N SN74H04N SN74H04N SN74H04N
1820-0141 1820-0971 1820-0966 1820-0186 1820-0379 1820-0370 1820-0370 1820-0424 1820-0380 1820-0380 1820-0424 1820-0384 1820-0424 1820-0512 1820-0964 1820-0964 1820-0964 1820-0608 1820-0964 1820-0608	1 2 1 3	IC:TTL QUAD 2-INPT AND GATE IC:CTL DUAL 2W 2-INPT AND/OR GATE IC:CTL DUAL 2-INPT AND 2W AND/OR GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL HS 4W 2-2-2-3 INPT ANO/OR GATE IC:TTL HS TRIPLE 3-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL GUAD 2-INPT AND GATE IC:TTL HS HEX INVERTER IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS 4W 2-2-2-3 INPT AND/OR/INV GATE IC:TTL 1 OF 8 DECODER W/ENABLE IC:TTL HS TRIPLE 3-INPT EXPANDER IC:TTL DUAL D F/F IC:TTL DUAL D F/F IC:TTL TRIPLE 3-3-1 INPT AND GATE IC:TTL TRIPLE 3-3-1 INPT AND GATE	01/95 04/13 07/63 07/63 07/63 01/95 01/95 01/95 04/13 04/13 01/95 01/95 01/95 01/95	SN74H74N MC3001P U6A997179X U6A996679X U6A985649X SN74H52N SN74H10N SN74H00N MC3001P SN74H04N SN74H04N SN74H53N MC4006P SN74H04N SN74H61N SN74H61N
1820-0371 1820-0370 1820-0141 1820-0424 1820-0380 1820-0608 1820-0424 1820-0384 1820-0512 1820-0964 1820-0608 1820-0964 1820-0141 1820-0379	1 3	IC:TTL HS TRIPLE 3-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL QUAD 2-INPT AND GATE IC:TTL HS HEX INVERTER IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS 4W 2-2-2-3 INPT AND/OR/INV GATE IC:TTL 1 OF 8 DECODER W/ENABLE IC:TTL HS HEX INVERTER IC:TTL HS TRIPLE 3-INPT EXPANDER IC:TTL DUAL D F/F IC:CTL TRIPLE 3-3-1 INPT AND GATE IC:TTL TO 8 DECODER W/ENABLE	01295 01295 01295 04713 04713 01295 04713 04713 04713 04713	SN74H52N SN74H10N SN74H00N MC3001P SN74H04N SN74H53N MC4006P SN74H04N SN74H61N SN74H61N
1820-0380 1820-0608 1820-0424 1820-0384 1820-0512 1820-0964 1820-0608 1820-0141 1820-0379	3 1	IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS 4W 2-2-2-3 INPT AND/OR/INV GATE IC:TTL 1 OF 8 DECODER W/ENABLE IC:TTL HS HEX INVERTER IC:TTL HS TRIPLE 3-INPT EXPANDER IC:TTL DUAL D F/F IC:CTL TRIPLE 3-3-1 INPT ANO GATE IC:TTL 1 OF 8 DECODER W/ENABLE	01295 01795 04713 04713 01295 01795	SN74H00N SN74H53N MC4006P SN74H04N SN74H61N SN74H74N U6A996479X
1820-0964 1820-0608 1820-0141 1820-0379	1	IC:TTL DUAL D F/F IC:CTL TRIPLE 3-3-1 INPT ANO GATE IC:TTL 1 OF 8 DECODER W/ENABLE	01:495 07:163	SN74H74N U6A996479X
1820-0370 1820-0186 1820-0437 1820-0839 1820-0071 1820-0074 1820-0608 1820-0371 1820-0379 1820-0379 1820-0341	1	IC:TTL QUAD 2-INPT AND GATE IC:TTL HS 4W 2-2-2-3 INPT AND/OR GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL QUAD D F/F IC:TTL QUAD D F/F IC:CTL DUAL 2W-2-INPT AND/OR GATE IC:CTL 4W 2-INPT AND/OR/INV GATE IC:TTL 1 OF 8 DECODER W/ENABLE IC:TTL HS TRIPLE 3-INPT NAND GATE IC:TTL HS TRIPLE 3-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS 4W 2-2-2-3 INPT AND/OR GATE IC:TTL GUAD 2-INPT AND GATE IC:TTL HS HEX INVERTER	04:13 04:13 01:95 01:95 01:95 04:13 01:95 04:13 01:95 04:13 04:95 04:13 04:13	MC4006P MC3001P SN74H52N SN74H00N U6A985649X MC4015P SN74175N U6A997179X SN7454N MC4006P SN74H10N SN74H10N SN74H00N SN74H00N SN74H04N
	1820-0424	1820-0424	1620-0424 IC:IIL HS HEX INVERTER	1620-0424 IC:TIL HS HEX INVERTER 04713

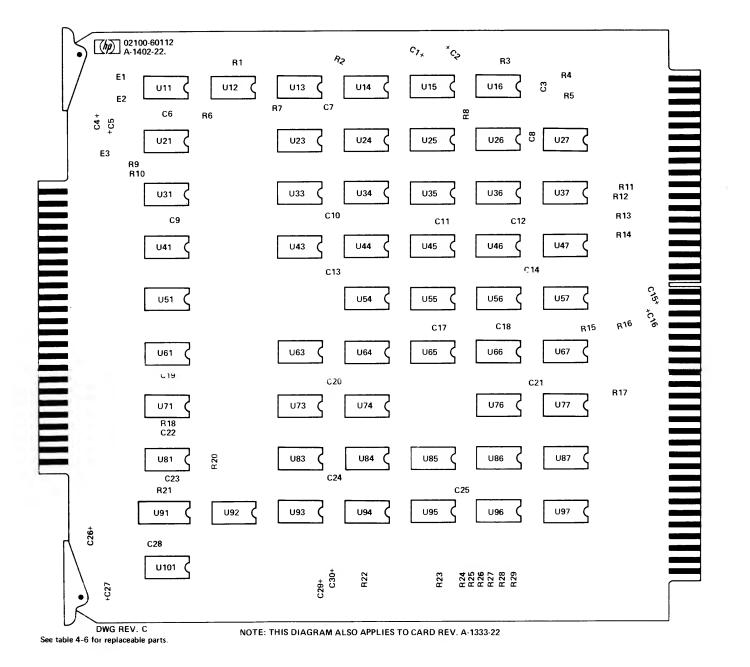
NOTES:

Not used on 02100-60022. Used on 02100-60022 only. Used on 02100-60112 only.

4-47

REF.					INDICATES SI	GNAL SOURCE
NO.		BACKPLANE	LOCATION			
A4						
3	A3-66*	A4-21				
5	A4-13	A5-58#	A6-79			
6	A4-38	A5-22#				
7 8	A4-35 A4-41*	A5-21* A5-7	A6-77 A6-3*			
9	A4-9#	A5-23	A6-17*			
10	A4-36	A5-45*				
11	A4-84*	A6-18				
12 13	A4-33 A3-43	A6-25 * A4-32	A6-7*			
14	A4-14*	A5-41	A6-84*			
15	A1-60	A4-62*				
18	A4-76	A7-5	A8-51*	A9-24	A10-7 THR	U A23-7
21 25	A1-84* A1-76*	A4-69	A6-31	A8-70		
26	A3-20*	A4-61 A4-11				
27	A3-50	A4-56	A5-19#	A6-11		
28	A1-52*	A4-19	A24-43			
34	A3-83	A4-58*				
39 42	A4-51* Al-46	A6-83 A2-65*	A4-55			
44	A4-10	A6-82*	A24-22			
47	A1-67	A4-64	A24-21*			
48	A4-23*	A6-8Ø				
51 52	A4-66# A4-3#	A5-50 A5-46				
53	A4-4#	A5-56				
54	A4-5*	A5-55				
202	A2-67	A3-3	A4-7*	40-4E		
237 239	A2-61 Al-9	A4-54 A2-80	A6-63* A3-71	A8-65 A4-24	A6~58*	A8-63
252	A1-73	A4-46*	N3 71	N7 E.	NO 30	
253	A3-36	A4-49#				
254	A2-69	A4-18#	44 224			
257 259	A4-8* A4-20*	A5-24 A5-12	A6-20*			
276	A3-59	A4-60*				
292	A4-68*	A6-8	A24-51			
293	A1-81	A4-65#	404 005			
302 303	A3-60 A3-72	A4-28 A4-26	A24-38* A24-41*			
327	A4-42*	A5-83	NE4 41			
328	A4-74	A5-9*				
329	A4-22	A5-5				
330 331	A4-15* A4-25*	A5-64 A5-62				
334	A1-54*	A3-28#	A4-27	A9-31*	A24-77*	A107-72
335	A1-8*	A2-70	A4-30	A6-9	A7-20	A8-75
336	A107-82 A4-67*	A6-68				
346	A2-58	A4-82*				
353	A2-37*	A4-78				
354	A2-36*	A4-77				
355	A2-35*	A4-80				
356 357	A2-34* A2-14*	A4-79 A4-43				
362	A2-4*	A4-37				
363	A2-5*	A4-34				
364 368	A2-6* A3-24*	A4-29 A4-57*	A5-35+36	A24-23#		
369	A1-71	A2-41	A4-17#	ALT ES		
411	A1-14	A2-11	A4-75	A5-4*	A6-41	A8-33*
410	A9-84#	A107-52	A0-74	124-9		
412 432	A4-71 A3-30*	A7-49* A4-59*	A8-74 A9-41*	A24-8 A107-74		
433	A4-70	A7-17	A8-52*		HRU A23-5	
435	A4-72	A7-24	A8-59*	A10-25	THRU A23-25	
437	A3-78	A4-83*	A7-21*	A10-124	THRU A23-12	*
440 441	A1-17 A2-77	A4-16# A3-84	A4-81	A10-12"	1110 ME3-12	-
442	A3-65	A4-6	A6-71*			

REF.		BACKPLANE	LOCATION		INDICATES	SIGNAL	SOURCE
A4 (C)	ONT)						
443	A4-50	A6-50*					
451	A3-62	A4-12	A6-72*				
454	A1-55	A2-62	A3-42	A4-52	A6-76*		
475	A4-73	A7-6	A8-49*	A10-9	THRU A23-9		
484	A4-45*	A5-53					
485	A4-44*	A5-54					
499	A4-63	A24-35*					
500	A1-59*	A4-31					
501	A1-57*	A4-53					



A/B CLR A/B SEL FLAG OVF RIR 12 RIR 13 RIR 14

RIR 15

RIR 16

RIR 21

RIR 22 RIR 23

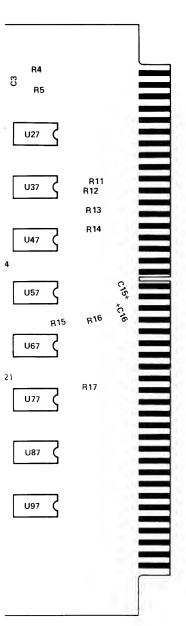
NOTES.

1. RESISTANCE V
IN UF UNLESS (

NUMERALS WI NUMBERS.

DECODED RON THESIS ().

SOURCE



FF DEFINITIONS

A/B CLR = A AND B CLEAR

A/B SEL = A OR B SELECT

FLAG = FLAG

INM = INCEX MODE

JMPF = JUMP (FUNCTION FIELO DECOGEO)

JSB = "NOT" JUMP TO SUBROUTINE (FUNCTION FIELO OFCODE)

OVF = "NOT" OVERFLOW

RIR 12 = ROM INSTRUCTION REGISTER BIT 12

RIR 13 = ROM INSTRUCTION REGISTER BIT 13

RIR 14 = ROM INSTRUCTION REGISTER BIT 14

RIR 15 = ROM INSTRUCTION REGISTER BIT 15

RIR 16 = ROM INSTRUCTION REGISTER BIT 16

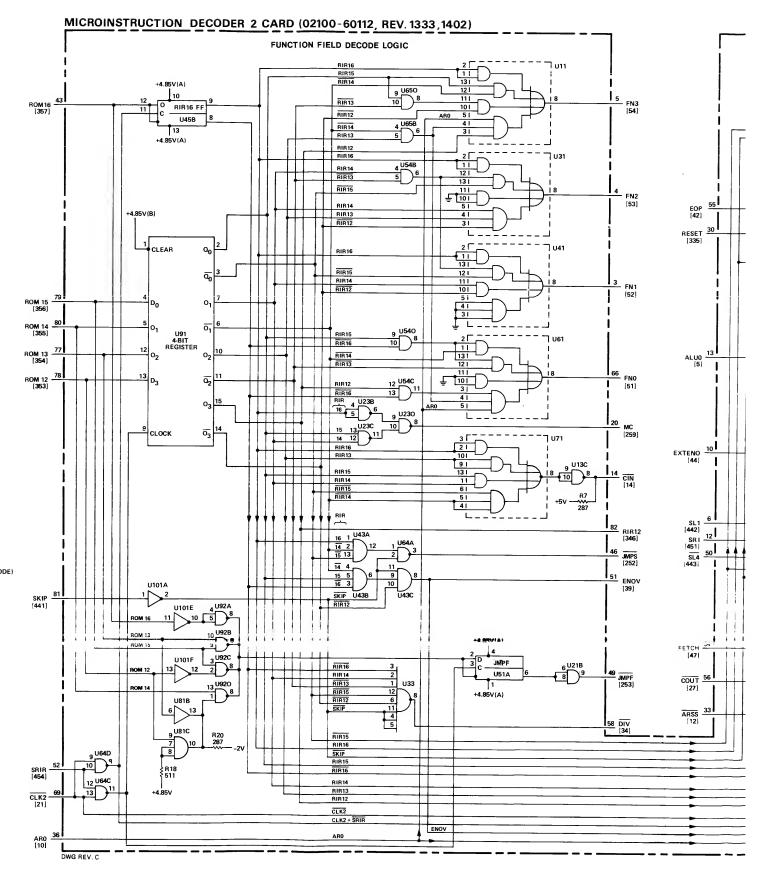
RIR 21 = ROM INSTRUCTION REGISTER BIT 16

RIR 21 = ROM INSTRUCTION REGISTER BIT 21

= ROM INSTRUCTION REGISTER BIT 23

NOTE

- RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.
- ALL PIN NUMBERS REFER TO 86-PIN CONNECTOR UNLESS OTHER-WISE INDICATED.
- NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.
- 4. DECOGEO ROM MICROINSTRUCTION MNEMONICS APPEAR IN PARENTHESIS ().



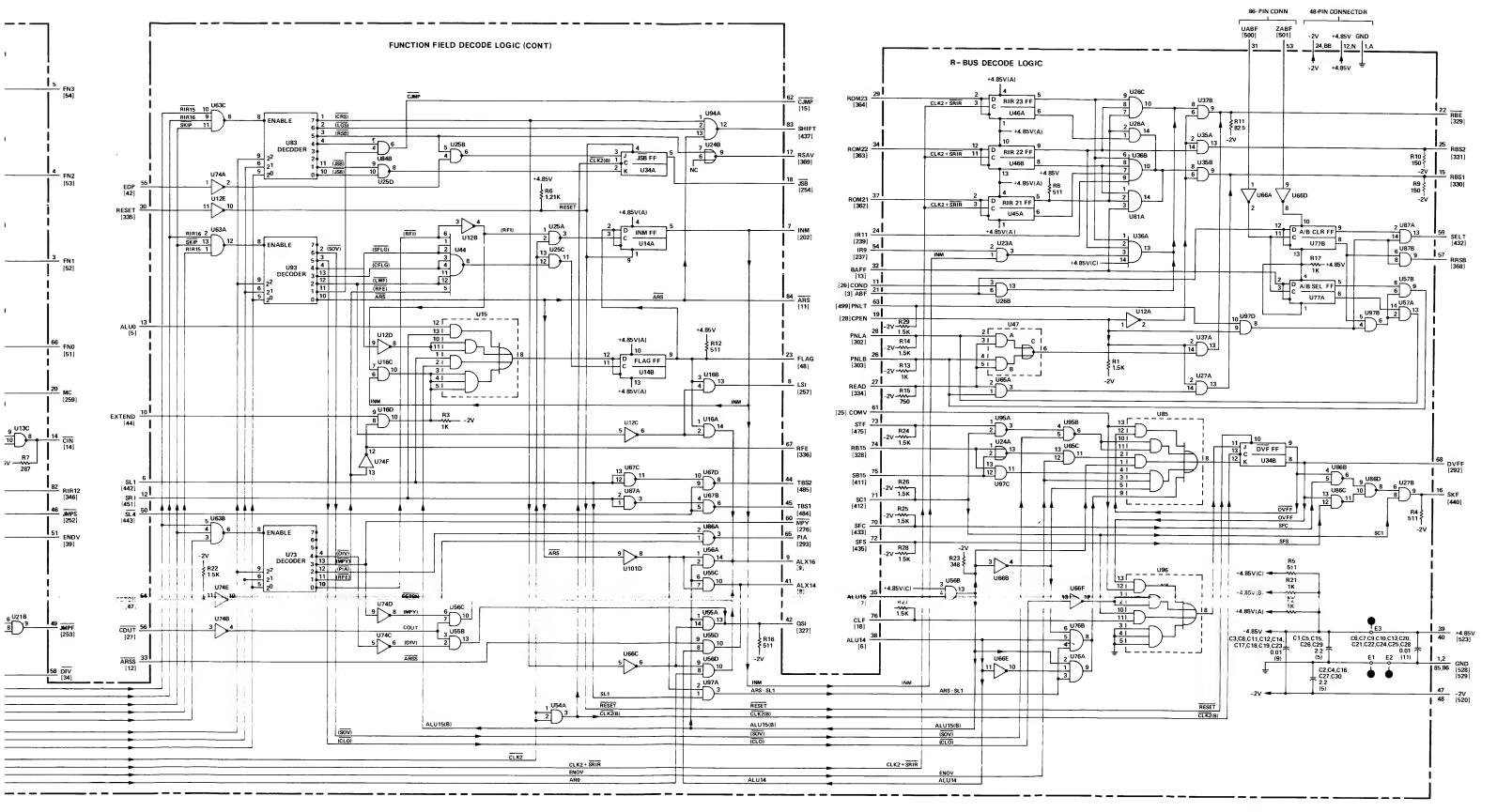
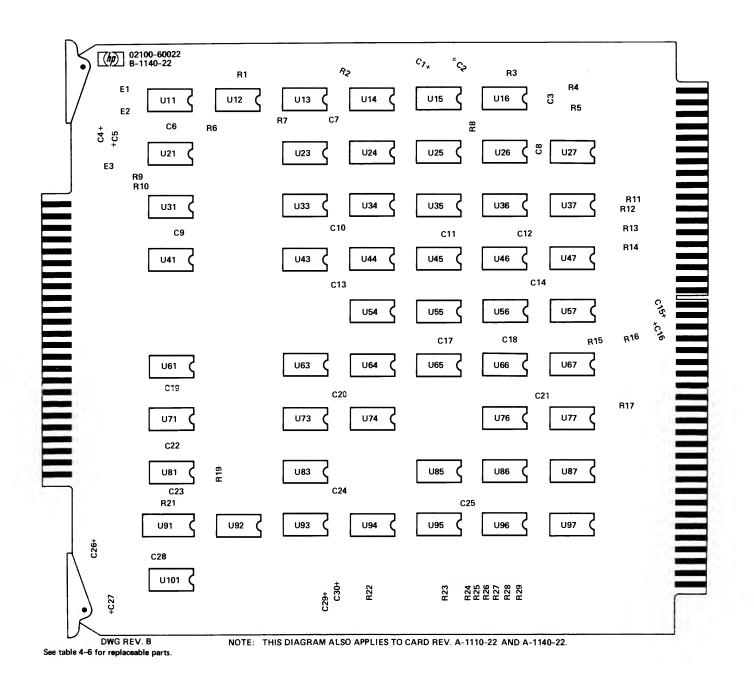


Figure 4-7. A4 Microinstruction Decoder 2 Card (02100-60112), Parts Location and Schematic Diagrams



A/B CLR = A ANO B

A/B SEL = A OR B S
FLAG = FLAG
INM = INDEX M
JSB = JUMP TO

OVF = "NOT" 0

RIR 12 = ROM INS

RIR 14 = ROM INS

RIR 21 = ROM INS

RIR 23 = ROM INS

RESISTANCE VALUES A
 IN UF UNLESS OTHERW

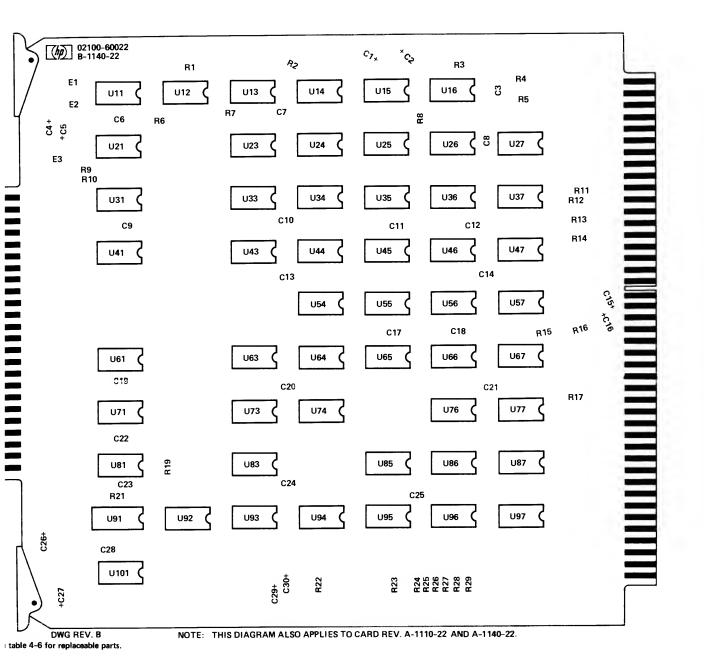
2. ALL PIN NUMBERS REFI WISE INDICATED.

3. NUMERALS WITHIN BRACKE NUMBERS.

4. DECOOEO ROM MICROINSTF THESIS ().

5. R6 IS 383 OHMS ON CARD RE

)0A



FF DEFINITIONS

A/B CLR = A AND B CLEAR

A/B SEL = A OR B SELECT

= FLAG

= INDEX MODE

= JUMP TO SUBROUTINE

= "NOT" OVERFLOW

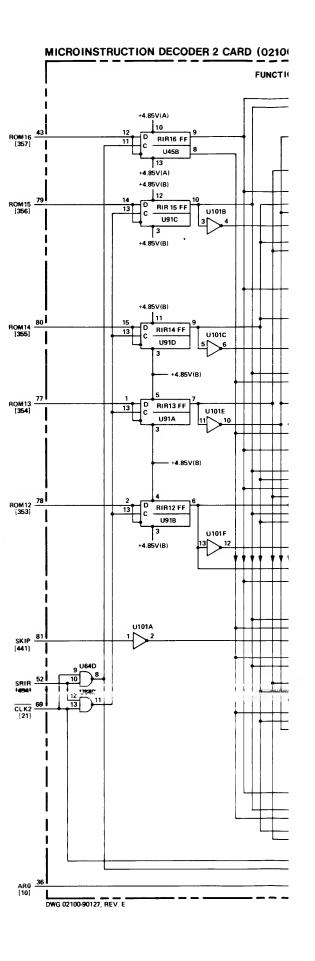
= ROM INSTRUCTION REGISTER BIT 12 ROM INSTRUCTION REGISTER BIT 13

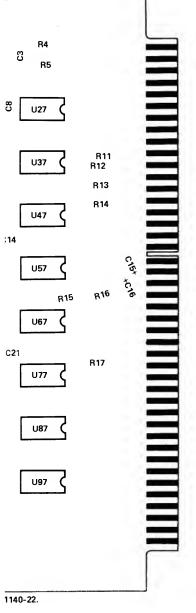
ROM INSTRUCTION REGISTER BIT 15

RIR 23 = ROM INSTRUCTION REGISTER BIT 23

- NOTES:

 1. RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.
- ALL PIN NUMBERS REFER TO 86-PIN CONNECTOR UNLESS OTHER WISE INDICATED.
- NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.
- DECODED ROM MICROINSTRUCTION MNEMONICS APPEAR IN PARENTHESIS ().
- 5... R6 IS 383 OHMS ON CARD REV. 1110





A/B CLR = A ANO B CLEAR

A/B SEL = A OR B SELECT FLAG = FLAG

INM = INCEX MODE

SB = JUMP TO SUBROUTIN

OVF = "NOT" OVERFLOW

RIR 12 = ROM INSTRUCTION REGISTER BIT 12 RIR 13 = ROM INSTRUCTION REGISTER BIT 13

RIR 14 = ROM INSTRUCTION REGISTER BIT 14

HIR 15 = HOM INSTRUCTION REGISTER BIT 15

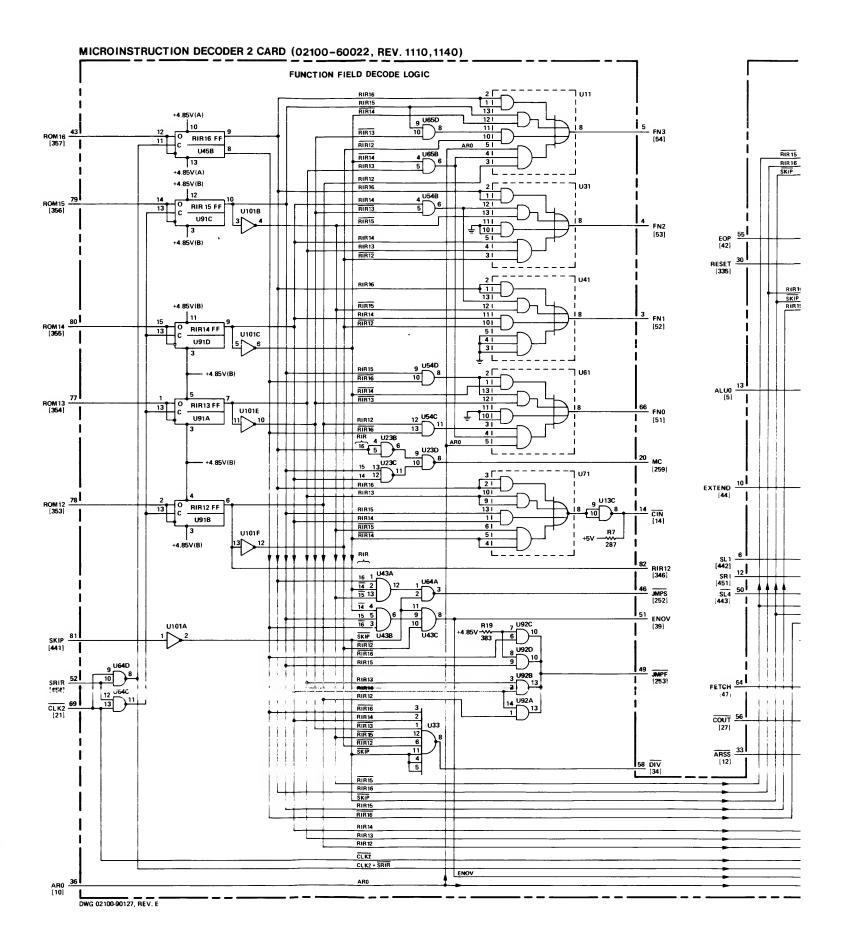
RIR 16 = ROM INSTRUCTION REGISTER BIT 1

RIR 21 = ROM INSTRUCTION REGISTER BIT 21

RIR 22 = ROM INSTRUCTION REGISTER BIT 22
RIR 23 = ROM INSTRUCTION REGISTER BIT 23

NOTE

- RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.
- ALL PIN NUMBERS REFER TO 86-PIN CONNECTOR UNLESS OTHER-WISE INDICATEO.
- NUMFRALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.
- OECODED ROM MICROINSTRUCTION MNEMONICS APPEAR IN PAREN THESIS ().
- R6 IS 383 OHMS ON CARD REV; 1110.



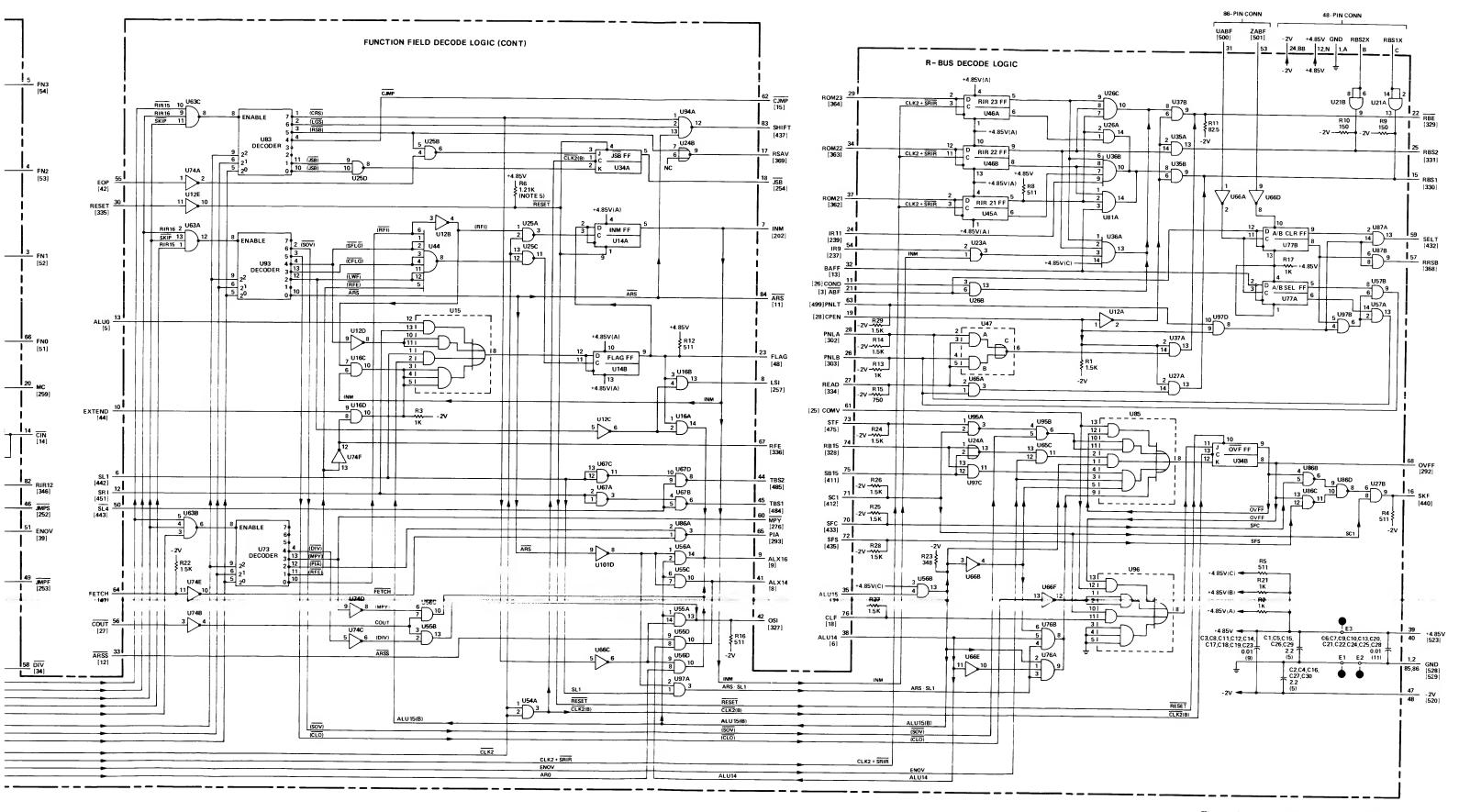


Figure 4-7A. A4 Microinstruction Decoder 2 Card (02100-60022), Parts Location and Schematic Diagrams

Table 4-7. A5 Arithmetic/Logic Card, Replaceable Parts

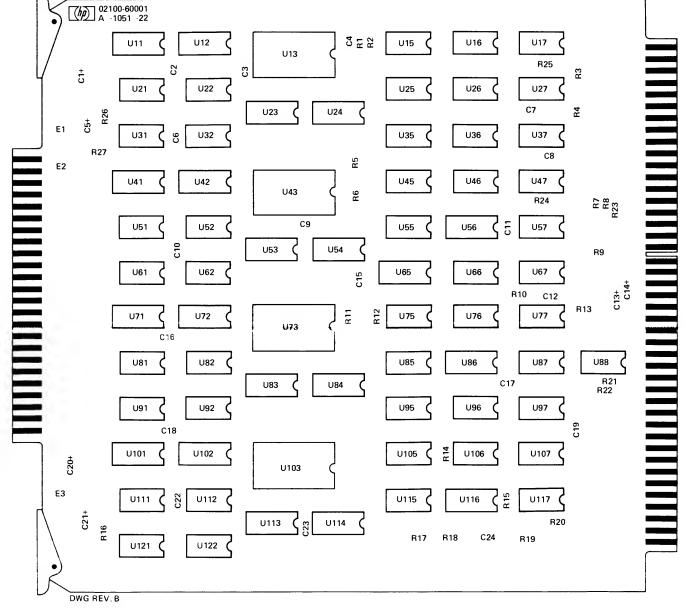
Reference Designation	HP Part Number	Qty	Description	Mfr €ode	Mfr Part Number
A5 A5C1 A5C2 A5C3 A5C4	02100-60001 0180-0197 0160-2055 0160-2055 0160-2055	1 6 18	ARITHMETIC LOGIC CARO C:FXO ELECT 2.2 UF 10% 20VDCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW	\$8480 \$6289 \$6289 \$6289 \$6289	02100-60001 1500225X9020A2-0YS C023F101F103Z522-C0H C023F101F103Z522-C0H C023F101F103Z522-C0H
A5C5 A5C6 A5C7 A5C8 A5C9	0180-0197 0160-2055 0160-2055 0160-2055 0160-2055		C:FX0 ELECT 2.2 UF 10% 20V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW	\$6289 \$6289 \$6289 \$6289 \$6289 \$5289	1500225X9020A2-0YS C023F101F103X522-COH C023F101F103X522-COH C023F101F103X522-COH C023F101F103X522-COH
A5C10 A5C11 A5C12 A5C13 A5C14	0160-2055 0160-2055 0160-2055 0180-0197 0180-0197		C:FXO CER 0.01 UF +80-20% 100V0CW C:FXO CER 0.01 UF +80-20% 100V0CW C:FXO CER 0.01 UF +80-20% 100V0CW C:FXO ELECT 2.2 UF 10% 20V0CW C:FXO ELECT 2.2 UF 10% 20V0CW	\$5289 \$5289 \$5289 \$5289 \$5289	C023F101F103ZS22-C0H C023F101F103ZS22-C0H C023F101F103ZS22-C0H 1500225X9020A2-0YS 1500225X9020A2-0YS
A5C15 A5C16 A5C17 A5C18 A5C19	0160-2055 0160-2055 0160-2055 0160-2055 0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW	\$\cdot 289 \$\cdot 289 \$\cdot 289 \$\cdot 289 \$\cdot 289	C023F101F103ZS22-C0H C023F101F103ZS22-C0H C023F101F103ZS22-C0H C023F101F103ZS22-C0H
A5C20 A5C21 A5C22 A5C23 A5C24	0180-0197 0180-0197 0160-2055 0160-2055 0160-2055		C:FX0 ELECT 2.2 UF 10% 20VOCW C:FX0 ELECT 2.2 UF 10% 20VOCW C:FX0 CER 0.01 UF +80-20% 100VOCW C:FX0 CER 0.01 UF +80-20% 100VOCW C:FX0 CER 0.01 UF +80-20% 100VOCW	5#289 5#289 5#289 5#289 5#289	C023F101F103ZS22-C0H 1500225X9020A2-0YS 1500225X9020A2-0YS C023F101F103ZS22-C0H C023F101F103ZS22-C0H
A5E1 A5E2 A5E3 A5R1 A5R2	0360-0294 0360-0294 0360-0294 0698-7229 0698-7229	3 17	TERMINAL:SOLOER POINT TERMINAL:SOLOER POINT TERMINAL:SOLOER POINT R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W	28480 28480 28480 28480 28480	C023F101F103ZS22-C0H 0360-0294 0360-0294 0360-0294 0698-7229 0698-7229
A5R3 A5R4 A5R5 A5R6 A5R7	0698-7229 0698-7229 0698-7229 0698-7229 0698-7229		R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W	2 \$ 4 80 2 \$ 4 80 2 \$ 4 80 2 \$ 4 80 2 \$ 4 80	0698-7229 0698-7229 0698-7229 0698-7229
A5R8 A5R9 A5R10 A5R11 A5R12	0698-7229 0698-3443 0698-7229 0698-7229 0698-7229	1	R:FXO FLM 511 OHM 2% 1/8W R:FXO MET FLM 287 OHM 1% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W	28+80 28+80 28+80 28+80 28+80	0698-7229 0698-7229 0698-3443 0698-7229 0698-7229
A5R13 A5R14 A5R15 A5R16 A5R17	0698-7229 0698-7229 0698-7236 0698-7236 0698-7229	2	R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 1K OHM 2% 1/8W R:FXO FLM 1K OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W	28-80 28-80 28-80 28-80 28-80 28-80	0698-7229 0698-7229 0698-7236 0698-7236
A5R18 A5R19 A5R20 A5R21 A5R22	0698-7229 0698-7229 0698-7229 0698-7219 0698-7219	3	R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 196 OHM 2% 1/8W R:FXO FLM 196 OHM 2% 1/8W	28# 80 28# 80 28# 80 28# 80 28# 80	0698-7229 0698-7229 0698-7229 0698-7219
A5R 23 A5R 24 A5R 25 A5R 26 A5R 26 A5R 27	0698-7219 0698-7214 0698-7214 0698-7221 0698-7221	2	R:FXO FLM 196 OHM 2% 1/8W R:FXO FLM 121 OHM 2% 1/8W R:FXO FLM 121 OHM 2% 1/8W R:FXO FLM 237 OHM 2% 1/8W R:FXO FLM 237 OHM 2% 1/8W	28\$ 80 28\$ 80 28\$ 80 28\$ 80 28\$ 80 28\$ 80	0698-7219 0698-7219 0698-7214 0698-7214 0698-7221
45011 45012 45013 45015 45016	1820-0620 1820-0620 1820-0606 1820-0612 1820-0971	8 4 8 8	IC:TTL OUAL 4-INPT MULTIPLEXER IC:TTL OUAL 4-INPT MULTIPLEXER IC:TTL ARITH. LOGIC UNIT/FUNCTION GEN. IC:CTL 8-81T RAM (4 x 2) IC:CTL OUAL 2#-2-INPT ANO/OR GATE	01295 01295 01295 01295 07263 07263	0698-7221 SN74153N SN74153N SN74181N U6A903059X
15U17 15U21 15U22 15U23 15U24	1820-0971 1820-0607 1820-0607 1820-0610 1820-0610	16	IC:CTL OUAL 2W-2-INPT ANO/OR GATE IC:TTL 4-8IT RT/LT SHIFT REGISTER IC:TTL 4-8IT RT/LT SHIFT REGISTER IC:TTL DUAL 4-INPT MULTIPLEXER IC:TTL OUAL 4-INPT MULTIPLEXER	07253 04713 04713 07263	U6A997179X U6A997179X MC4012P MC4012P U68930959X U68930959X
5U25 5U26 5U27 5U31 5U32	1820-0612 1820-0231 1820-0186 1820-0607 1820-0607	10	IC:CTL 8-81T RAM (4 X 2) IC:TTL 4-81T SYNC BINARY COUNTER IC:CTL OUAL 2-INPT ANO GATE IC:TTL 4-81T RT/LT SHIFT REGISTER IC:TTL 4-81T RT/LT SHIFT REGISTER	07.24.3 07.24.3 07.24.3 04.74.3 04.74.3	U6A903059X U6A931659X U6A985649X MC4012P MC4012P
5U35 5U36 5U37 5U41 5U42	1820-0955 1820-0954 1820-0186 1820-0620 1820-0620	2	IC:CTL 8-INPT DUAL OUTPUT ANO GATE IC:CTL OUAL 4-INPT ANO GATE IC:TCL OUAL 2-INPT ANO GATE IC:TTL OUAL 4-INPT MULTIPLEXER IC:TTL OUAL 4-INPT MULTIPLEXER	072#3 072#3 072#3 072#3 012#5	U6A995479X U6A995479X U6A985649X SN74153N SN74153N

			A

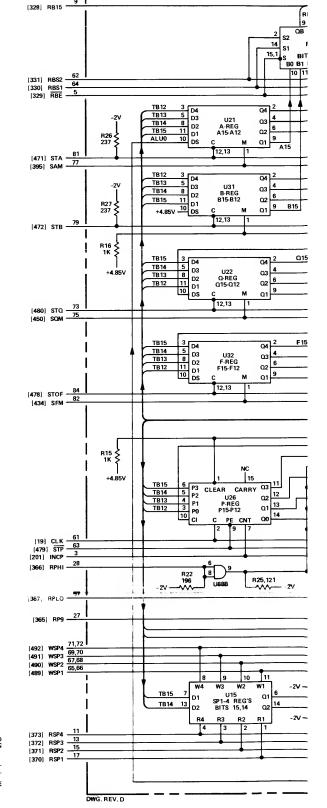
Table 4-7. A5 Arithmetic/Logic Card, Replaceable Parts (Continued)

Reference Designation	HP Part Number	Qty	Description	Mir Code	Mfr Part Number
A5U43 A5U45 A5U46 A5U47 A5U51	1820-0606 1820-0612 1820-0971 1820-0971 1820-0607		IC:TTL ARITH. LOGIC UNIT/FUNCTION GEN. IC:CTL 8-8IT RAM (4 X 2) IC:CTL DUAL 2W-2-INPT AND/OR GATE IC:CTL DUAL 2W-2-INPT AND/OR GATE IC:TTL 4-8IT RT/LT SHIFT REGISTER	01295 07263 07263 07263 04713	SN74181N U6A903059X U6A997179X U6A997179X MC4012P
A5U52 A5U53 A5U54 A5U55 A5U56	1820-0607 1820-0610 1820-0610 1820-0612 1820-0231		IC:TTL 4-8IT RT/LT SHIFT REGISTER IC:TTL OUAL 4-INPT MULTIPLEXER IC:TTL OUAL 4-INPT MULTIPLEXER IC:CTL 8-8IT RAM (4 x 2) IC:TTL 4-8IT SYNC 8INARY COUNTER	04713 07263 07263 07263 07263	MC4012P U6B930959X U6B930959X U6A903059X U6B931659X
A5U57 A5U61 A5U62 A5U65 A5U66	1820-0186 1820-0607 1820-0607 1820-0611 1820-0186	1	IC:CTL OUAL 2-INPT AND GATE IC:TTL 4-8IT RT/LT SHIFT REGISTER IC:TTL 4-BIT RT/LT SHIFT REGISTER IC:TTL LOOK-AHEAO CARRY GENERATOR IC:CTL DUAL 2-INPT AND GATE	07263 04713 04713 01295 07263	U6A985649X MC4012P MC4012P SN74182N U6A985649X
A5U67 A5U71 A5U72 A5U73 A5U75	1820-0186 1820-0620 1820-0620 1820-0606 1820-0612		IC:CTL DUAL 2-INPT AND GATE IC:TTL DUAL 4-INPT MULTIPLEXER IC:TTL DUAL 4-INPT MULTIPLEXER IC:TTL ARITH. LOGIC UNIT/FUNCTION GEN. IC:CTL 8-81T RAM (4 X 2)	07.263 05.295 04.295 05.295 07.263	U6A985649X SN74153N SN74153N SN74181N U6B930959X
A5U76 A5U77 A5U81 A5U82 A5U83	1820-0971 1820-0971 1820-0607 1820-0607 1820-0610		IC:CTL DUAL 2W-2-INPT AND/OR GATE IC:CTL DUAL 2W-2-INPT AND/OR GATE IC:TTL 4-8IT RT/LT SHIFT REGISTER IC:TTL 4-8IT RT/LT SHIFT REGISTER IC:TTL OUAL 4-INPT MULTIPLEXER	07.263 07.263 04713 04713 07.263	U6A997179X U6A997179X MC4012P MC4012P U68930959X
A5U84 A5U85 A5U86 A5U87 A5U88	1820-0610 1820-0612 1820-0231 1820-0186 1820-0186	-	IC:TTL DUAL 4-INPT MULTIPLEXER IC:CTL 8-8IT RAM (4 X 2) IC:TTL 4-BIT SYNC 8INARY COUNTER IC:CTL DUAL 2-INPT AND GATE IC:CTL OUAL 2-INPT AND GATE	07.263 07.263 07.263 07.263 07.263	U68930959X U6A903059X U68931659X U6A985649X U6A985649X
A5U91 A5U92 A5U95 A5U96 A5U97	1820-0607 1820-0607 1820-0955 1820-0186 1820-0186		IC:TTL 4-8IT RT/LT SHIFT REGISTER IC:TTL 4-BIT RT/LT SHIFT REGISTER IC:CTL 8-INPT DUAL OUTPUT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE	04/13 04/13 07/263 07/263 07/263	MC4012P MC4012P U6A995579X U6A985649X U6A985649X
A5U101 A5U102 A5U103 A5U105 A5U106	1820-0620 1820-0620 1820-0606 1820-0612 1820-0971		IC:TTL DUAL 4-INPT MULTIPLEXER IC:TTL OUAL 4-INPT MULTIPLEXER IC:TTL ARITH. LOGIC UNIT/FUNCTION GEN. IC:CTL 8-BIT RAM (4 X 2) IC:CTL DUAL 2W-2-INPT AND/OR GATE	01295 01295 01295 01263 07263	SN74153N SN74153N SN74181N U64903059X U649971179X
A5U107 A5U111 A5U112 A5U113 A5U114	1820-0971 1820-0607 1820-0607 1820-0610 1820-0610		IC:CTL OUAL 2W-2-INPT ANO/OR GATE IC:TTL 4-8IT RT/LT SHIFT REGISTER IC:TTL 4-8IT RT/LT SHIFT REGISTER IC:TTL DUAL 4-INPT MULTIPLEXER IC:TTL DUAL 4-INPT MULTIPLEXER	07.263 04713 04713 07.263 07.263	U6A997179X MC4012P MC4012P U68930959X U6B930959X
A5U115 A5U116 A5U117 A5U121 A5U122	1820-0612 1820-0231 1820-0186 1820-0607 1820-0607		IC:CTL 8-8IT RAM (4 X 2) IC:TTL 4-8IT SYNC BINARY COUNTER IC:CTL DUAL 2-INPT AND GATE IC:TTL 4-8IT RT/LT SHIFT REGISTER IC:TTL 4-BIT RT/LT SHIFT REGISTER	07.263 07.263 07.263 04.13 04.13	U6A903059X U68931659X U6A985649X MC4012P MC4012P
				+	

REF.				* IN	DICATES SI	GNAL SOURCE
NO.		BACKPLANE	LOCATION			
A5 1	A5-26*	A6-78				
ŝ	A4-13	A5-58*	A6-79			
6	A4-38	A5-22#				
7	A4-35	A5-21*	A6-77			
8	A4-41*	A5-7	A6-3#			
9	A4-9*	A5-23	A6-17*			
10 14	A4-36 A4-14*	A5-45* A5-41	A6-84*			
19	A1-51*	A5-61	AO 04			
27	A3-50	A4-56	A5-19*	A6-11		
51	A4-66*	A5-50				
52	A4-3*	A5-46				
53 54	A4-4* A4-5*	A5-56 A5-55				
201	A1-43*	A5-33				
257	A4-8*	A5-24	A6-20*			
259	A4-20*	A5-12				• 7
327	A4-42*	A5-83				
328	A4-74	A5-9*				
329 330	A4-22* A4-15*	A5-5 A5-64				
331	A4-25*	A5-62				
365	A3-21*	A5-27				
366	A3-23*	A5-28				
367	A3-6*	A5-57	AF 25 24	404 00#		
368 370	A3-24* A3-10*	A4-57* A5-17	A5-35+36	A24-23*		
371	A3-7*	A5-15				
372	A3-5*	A5-13				
373	A3-8*	A5-11				
395	A3-67*	A5-77				40.34
396	A2-46#	A5-78#	A6-32	A7-62*	A8-3*	A9-16*
397	A107-16 A2-44#	A5-80*	A6-60	A7-61*	A8-4*	A9-14#
371	A107-18	M3-0M-	40-0E	A7-01-	A0-4-	A2 44"
398	A2-29 *	A5-76#	A6-61	A7-60*	A8-5*	A9-18*
	A107-12					
399	A2-30#	A5-59*	A6-33	A7-59*	A8-6*	A9-13*
400	A107-14 A2-19#	A5-52#	A6-65	A7-64*	A8-7*	A9-12*
400	A107-29	M3-35"	MO-03	#1-04"	A01	A7 16"
401	A2-20#	A5-51*	A6-64	A7-57*	A8-8*	A9-10#
	A107-38					
402	A2-12#	A5-49#	A6-67	A8-9#	A9-20*	A107-20
403 404	A2-9* A2-53*	A5-43* A5-31*	A6-66 A6-52	A8-24* A8-14*	A9-11* A9-5*	A107-22 A107-44
405	A2-54+	A5-32*	A6-51	A8-18#	A9-3*	A107-46
406	A2-43#	A5-29#	A6-54	A8-19#	A9-9*	A107-34
407	A2-49#	A5-30*	A6-53	A8-20*	A9-7*	A107-36
408	A2-31 #	A5-10*	A6-38	A8-21*	A9-8*	A107-51
409	A2-21 *	A5-8*	A6-37	A8-22*	A9-4* A9-6*	A107-42 A107-50
410 411	A2-10* A1-14	A5-6* A2-11*	A6-42 A4-75	A8-23# A5-4#	A6-41	A107-50 A8-33*
711	A9-84*	A107-52	74 13	n3 +	A0 41	HO 00
434	A3-74*	A5-82				
450	A3-70#	A5-75				
471	A3-69*	A5-81 A5-79				
472 478	A3-63* A3-82*	A5-19 A5-84				
479	A3-64*	A5-63				
480	A3-80*	A5-73				
484	A4-45*	A5-53				
485	A4-44*	A5-54				
486 489	A5-25* A3-55*	A6-19 A5-65				
490	A3-56*	A5-67				
491	A3-45*	A5-69				
492	A3-49*	A5-71				

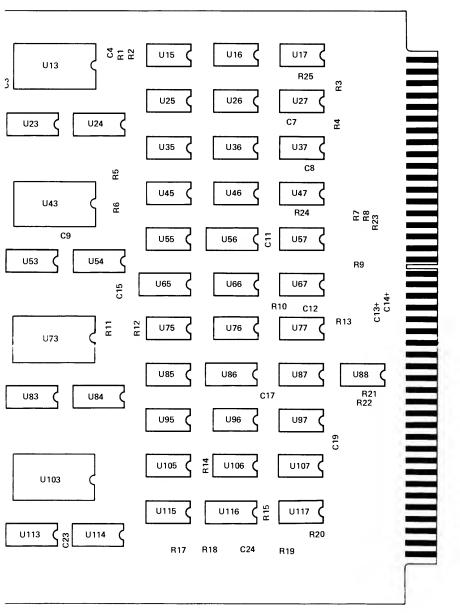


See table 4-7 for replaceable parts.



NQTES:

- RESISTANCE VALUES ARE IN QHMS AND
 CAPACITANCE VALUES ARE IN UF UNLES
 OTHER PROPERTIES.
- 2. ALL PIN NUMBERS REFER TO 86-PIN CO
- NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.

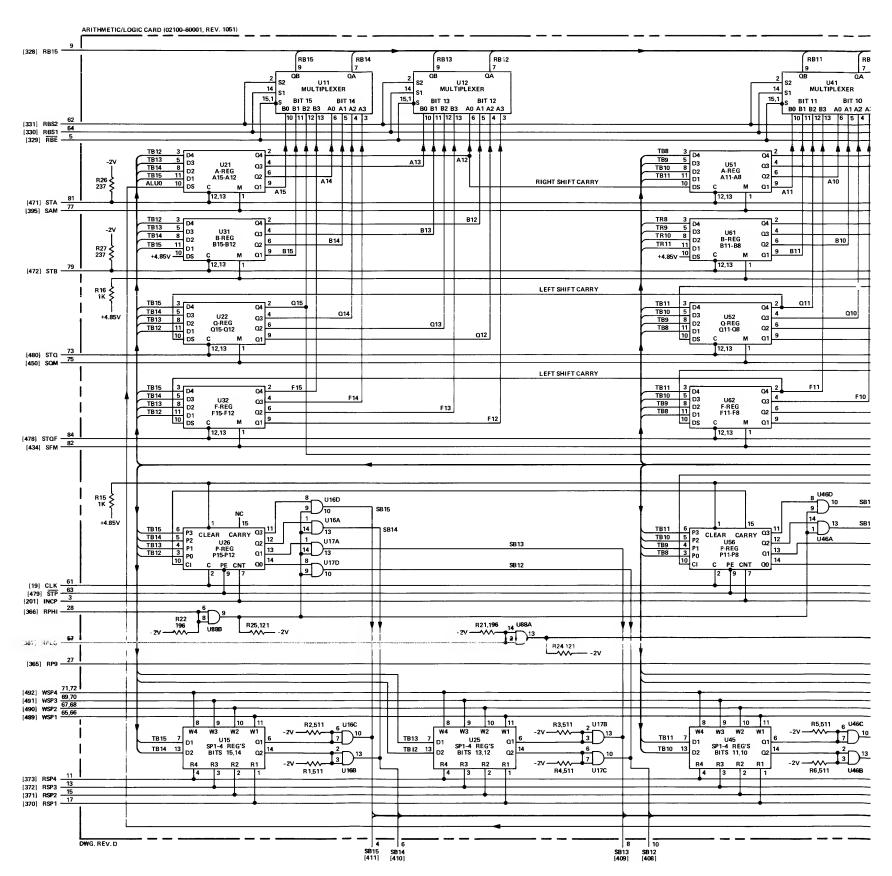


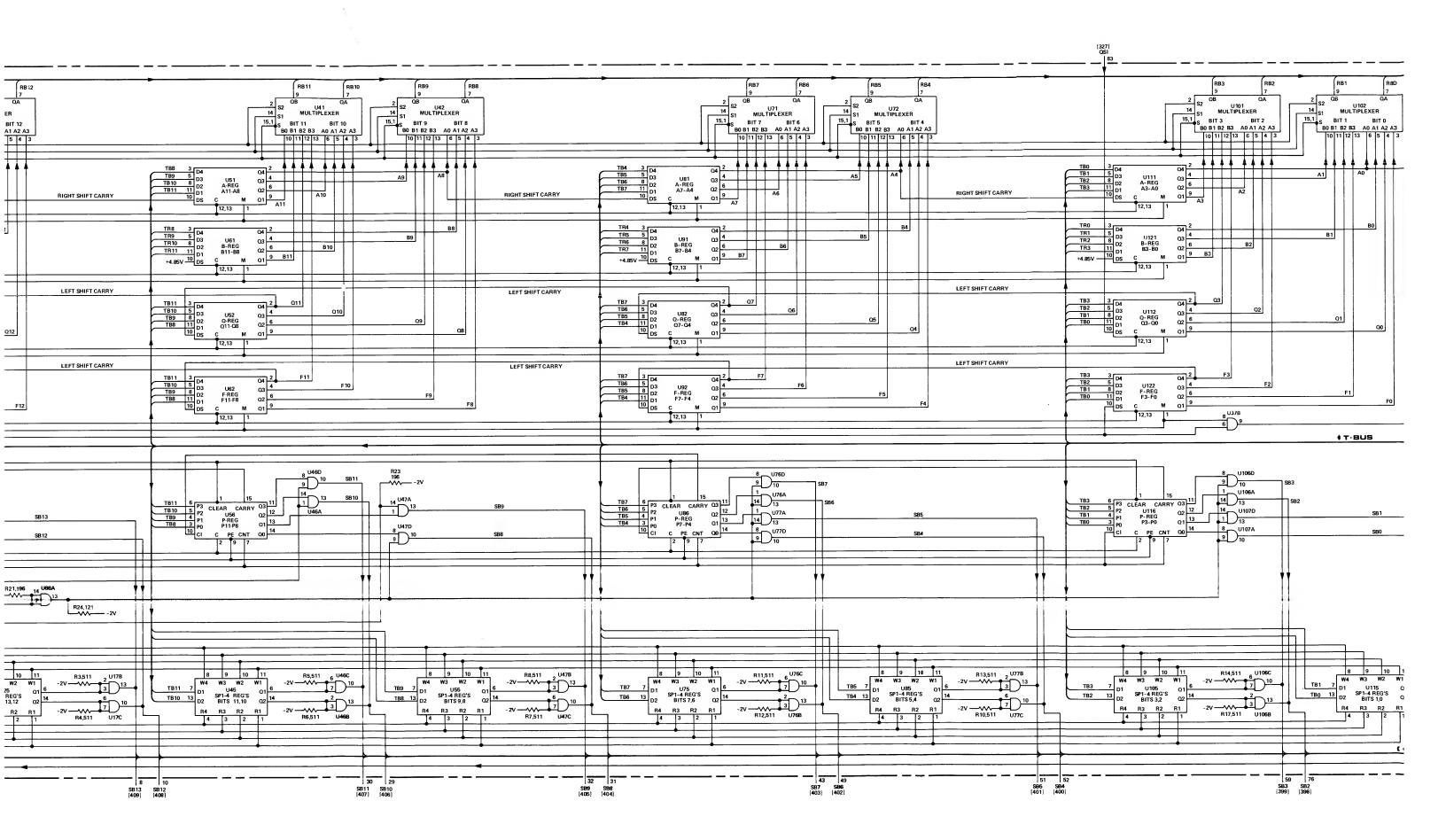
TES:

. RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.

2. ALL PIN NUMBERS REFER TO 86-PIN CON

3. NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.





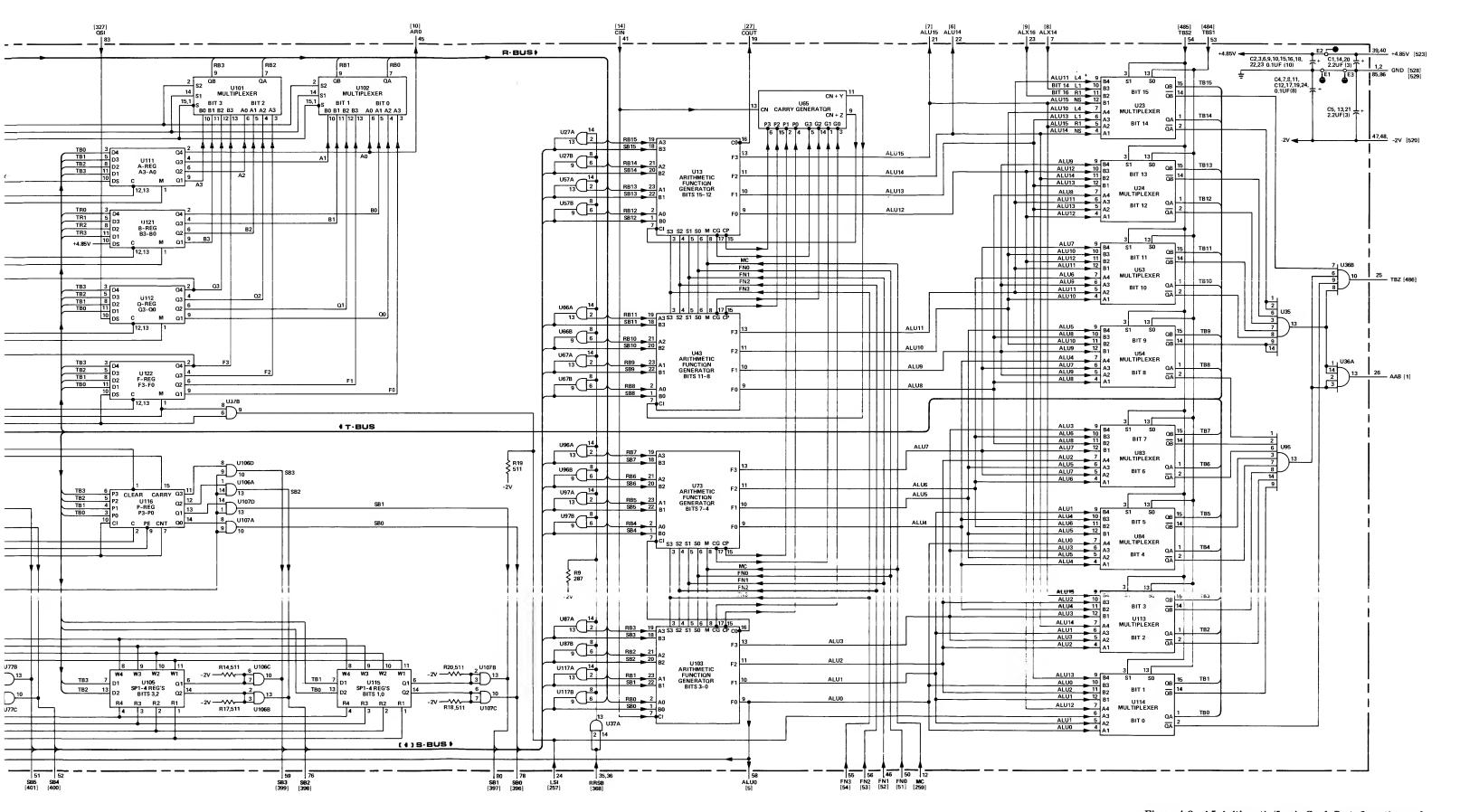


Figure 4-8. A5 Arithmetic/Logic Card, Parts Location and Schematic Diagrams

Table 4-8. A6 Instruction Rogister Decoder Card, Replaceable Parts

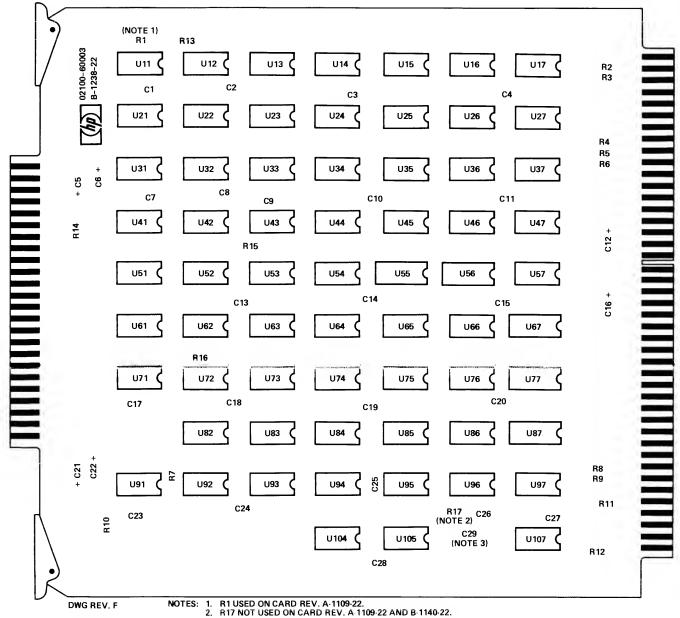
Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A6 A6C1 A6C2 A6C3 A6C4	C2100-60003 0160-2055 0160-2055 0160-2055 0160-2055	1 22	INSTRUCTION REGISTER OECUOER CARO C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-2D% 100VOCW	28480 \$6289 \$6289 \$6289 \$6289	02100-60003 C023F101F103ZS22-COH C023F101F103ZS22-CDH C023F101F103ZS22-COH C023F101F103ZS22-COH
A6C5 A6C6 A6C7 A6C8 A6C9	0180-0197 0180-0197 0160-2055 0160-2055 0160-2055	6	C:FXD ELECT 2-2 UF 10% 20V0CW C:FXO ELECT 2-2 UF 10% 20V0CW C:FXO CER 0-01 UF +80-20% 100V0CW C:FXO CER 0-01 UF +80-20% 100V0CW C:FXO CER D-01 UF +80-20% 100V0CW	\$62.89 \$62.89 \$62.89 \$52.89 \$52.89	1500225X9020A2-DYS 1500225X9020A2-DYS C023F101F103Z522-C0H C023F101F103Z522-C0H C023F101F1D3Z522-C0H
A6C10 A6C11 A6C12 A6C13 A6C14	D160-2055 D160-2055 O180-0197 O160-2055 O160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VOCW C:FXO ELECT 2.2 UF 10% 20VDCW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO CER 0.01 UF +80-20% 100VOCW	\$5289 \$5289 \$5289 \$5289 \$5289	C023F101F103ZS22-CDH C023F101F103ZS22-COH 1500225X9020A2-DYS C023F101F103ZS22-COH C023F101F103ZS22-COH
A6C15 A6C16 A6C17 A6C18 A6C19	0160-2055 0180-0197 0160-2055 0160-2055 0160-2055		C:FXD CER D.01 UF +80-2D% 100VOCW C:FXD ELECT 2.2 UF 10% 20VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW	952 89 902 89 902 89 902 89 902 89	C023F101F103ZS22-C0H 15002Z5X90Z0AZ-DYS C023F101F103ZS22-C0H C023F101F103ZS22-C0H C023F101F103ZS22-C0H
A6C20 A6C21 A6C22 A6C23 A6C24	0160-2055 0180-0197 0180-0197 0160-2055 0160-2055		C:FXO CER 0.01 UF +80-20% 100VDCW C:FXD ELECT 2.2 UF 10% 20VOCW C:FXO ELECT 2.2 UF 10% 20VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VOCW	54,289 54,289 54,289 54,289 56,289	C023F101F103LS22-C0H 15D0225x9D20A2-0YS 15D0225x9020A2-DYS C023F1D1F103LS22-C0H C023F1D1F103LS22-CDH
A6C25 A6C26 A6C27 A6C28 A6C29(NOTE 4) A6R1(NOTE 1) A6R2 A6R3 A6R4 A6R5 A6R6	0160-2055 0160-2055 0160-2055 0160-2055 0140-0194 0757-0280 0757-0280 0698-3443 0757-0280 0757-0280 0757-0280	1 8 1	C:FXD CER D.01 UF +80-2D% 1D0VOCW C:FXO CER 0.01 UF +80-2D% 1D0VOCW C:FXO CER 0.01 UF +80-2D% 1D0VOCW C:FXO CER 0.01 UF +80-2D% 1D0VOCW C:FXO MICA 110 PF 5% R: FXD MET FLM 1K 0HM 1% 1/8W R:FXD MET FLM 1K 0HM 1% 1/8W R:FXO MET FLM 28T 0HM 1% 1/8W R:FXO MET FLM 1K 0HM 1% 1/8W R:FXO MET FLM 1K 0HM 1% 1/8W R:FXO MET FLM 1K 0HM 1% 1/8W R:FXO MET FLM 1K 0HM 1% 1/8W R:FXO MET FLM 1K 0HM 1% 1/8W R:FXO MET FLM 1K 0HM 1% 1/8W	5½ 2.89 5½ 2.89 5½ 2.89 5½ 2.89 5½ 1.36 2½ 4.80 2½ 4.80 2½ 4.80 2½ 4.80 2½ 4.80 2½ 4.80	C023F101F103ZS22=CDH C023F101F103ZS22=CDH C023F101F103ZS22=CDH C023F101F103ZS22=CDH RDM15F111J3C 0757-0280 0757-0280 0757-0280 0757-0280 0757-0280
A6R7 A6R8 A6R9 A6R10 A6R11	0757-0416 0698-3442 0698-3442 0698-3446 D698-3445	2 2 1 2	R:FXD MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 237 OHM 1% 1/8W R:FXD MET FLM 237 OHM 1% 1/8W R:FXD MET FLM 383 OHM 1% 1/8W R:FXD MET FLM 348 OHM 1% 1/8W	28480 28480 28480 28480 28480 28480	0757-0416 0698-3442 0698-3442 0698-3446 0698-3445
A6R12 A6R13 A6R14 A6R15 A6R16	0757-D416 0757-0280 0698-3445 0757-028D 0757-0280		R:FXD MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXD MET FLM 348 OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W	2 \$ 4 8 0 2 \$ 4 8 0 2 \$ 4 8 0 2 \$ 4 8 0 2 \$ 4 8 0	0757-0416 D757-0280 0698-3445 0757-0280 0757-0280
A6R17(NOTE 2) A6U11 A6U12 A6U13(NOTE 1) A6U13(NDTE 3)	0698-0082 1820-0512 1820-0141 1820-0451 1820-0695	1 7 1 1	R:FXO MET FLM 464 DHM 1% 1/8W IC:TTL QUAL D F/F IC:TTL QUAD 2-INPT AND GATE IC:TTL DUAL J-K F/F IC:TTL SHS DUAL J-K F/F W/PRESET	2 4 4 8 0 0 1 2 9 5 0 4 7 1 3 0 4 7 1 3 0 E 2 9 5	0698-0082 SN74H74N MC3001P MC3062P SN74S113N
A6U14 A6U15 A6U16 A6U17 A6U21	1820-0971 1820-0370 1820-0424 1820-0608 1820-0370	10 6 7 6	IC:CTL DUAL 2W-2-INPT AND/OR GATE IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL HS HEX INVERTER IC:TTL 1 OF DECODER W/ENABLE IC:TTL HS QUAD 2-INPT NAND GATE	07:263 01:295 04:13 04:13 01:295	U6A997179X SN74H00N SN74H04N MC4D06P SN74H00N
A6U22 A6U23 A6U24 A6U25 A6U26	1820-0424 1820-0373 1820-0971 1820-0971 1820-0424	1	IC:TTL HS HEX INVERTER IC:TTL HS DUAL 4-INPT NAND GATE IC:CTL OUAL 2W-2-INPT AND/OR GATE IC:CTL DUAL 2W-2-INPT AND/OR GATE IC:TTL HS HEX INVERTER	04 13 01295 07 63 07 63 04 13	SN74H04N SN74H20N U6A997179X U6A997179X SN74H04N
A6U27 A6U31 A6U32 A6U33 A6U34	182D-0608 182D-0971 1820-0971 182D-0141 1820-0370		IC:TTL 1 OF DECOOER W/ENABLE IC:CTL DUAL 2M-2-INPT AND/OR GATE IC:CTL DUAL 2M-2-INPT AND/OR GATE IC:TTL QUAD 2-INPT AND GATE IC:TTL HS QUAD 2-INPT NANO GATE	047 13 078 63 078 63 047 13 012 95	MC 4006P U6 A 997 1 7 9 X U6 A 997 1 7 9 X MC 300 1 P S N 7 4 H 0 O N
A6U35 A6U36 A6U37 A6U41 A6U42	1820-06D8 1820-D6D8 182D-0424 182D-0966 1820-0971	2	IC:TTL 1 OF DECODER W/ENABLE IC:TTL 1 OF DECODER W/ENABLE IC:TTL HS HEX INVERTER IC:CTL OUAL 2-INPT AND 2W AND/OR GATE IC:CTL OUAL 2W-2-INPT AND/OR GATE	04713 04713 04713 14433 D7263	MC40D6P MC4006P SN74H04N MIC 966 U6A997179X
A6U43 A6U44 A6U45 A6U46 A6U47	1820-0609 1820-0239 1820-0424 1820-0374 1820-0205	2 2 2 1	IC:TTL OUAL J-K F/F W/COM. CLK & RESET IC:TTL QUAD 2-INPT NOR GATE IC:TTL HS HEX INVERTER: IC:TTL HS DUAL 4-INPT AND GATE IC:TTL QUAD 2-INPT OR GATE	04713 28980 04713 01295 28480	MC3061P 1820-0239 SN74H04N SN74H21N 1820-0205

	1
	1

Table 4-8. A6 Instruction Register Decoder Card, Replaceable Parts (Continued)

Reference Designation	HP Part Number	Qty	Description	Mir Code	Mfr Part Number
A6U51 A6U52 A6U53 A6U54 A6U55	1820-0966 1820-0971 1820-0239 1820-0608 1820-0231	1	IC:CTL DUAL 2-INPT AND 2W AND/OR GATE IC:CTL DUAL 2W-2-INPT AND/OR GATE IC:TTL QUAD 2-INPT NOR GATE IC:TTL 1 OF DECODER W/ENABLE IC:TTL 4-BIT SYNC BINARY COUNTER	14+33 07:263 28:80 04:13 07:63	MIC 966 U6A997179X 1820-0239 MC4006P U6B931659X
A6U56 A6U57 A6U61 A6U62 A6U63	1820-0301 1820-0141 1820-0141 1820-0971 1820-0971	4	IC:TTL QUAD 8I-STABLE D-LATCH IC:TTL QUAD 2-INPT AND GATE IC:TTL QUAD 2-INPT AND GATE IC:CTL DUAL 2H-2-INPT AND/OR GATE IC:CTL DUAL 2H-2-INPT AND/OR GATE	012/95 047/13 047/13 07/263 07/263	SN7475N MC3001P MC3001P U6A997179X U6A997179X
A6U64 A6U65 A6U66 A6U67 A6U71	1820-0374 1820-0186 1820-0372 1820-0301 1820-0372	5 2	IC:TTL HS DUAL 4-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL TRIPLE 3-INPT AND GATE IC:TTL QUAD BI-STABLE D-LATCH IC:TTL TRIPLE 3-INPT AND GATE	D1795 D7763 2848D D1795 28480	SN74H21N U6A985649X 1820-0372 SN7475N 1820-0372
A6U72 A6U73 A6U74 A6U75 A6U76	1820-0609 1820-0971 1820-06D8 1820-0186 1820-0378	2	IC:TTL DUAL J-K F/F W/COM. CLK & RESET IC:CTL DUAL 2W-2-INPT AND/OR GATE IC:TTL 1 OF DECODER W/ENABLE IC:CTL DUAL 2-INPT AND GATE IC:TTL HS 2-WIDE 2-INPT	D4713 07263 04713 D7263 01295	MC3061P U6A997179X MC4006P U6A985649X SN74H51N
A6U77 A6U82 A6U83 A6U84 A6U85	1820-0301 1820-0186 1820-0370 1820-0370 1820-0424		IC:TTL QUAD BI-STABLE D-LATCH IC:CTL DUAL 2-INPT AND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS HEX INVERTER	D1295 07263 01295 01295 01295 04713	SN7475N U6A985649X SN74H00N SN74H00N SN74H04N
A6U86 A6U87 A6U91 A6U92 A6U93	18 20-0378 18 20-0301 18 20-0141 18 20-0187 18 20-0370	1	IC:TTL HS 2-WIDE 2-INPT IC:TTL QUAD BI-STABLE D-LATCH IC:TTL QUAD 2-INPT AND GATE IC:CTL DUAL 2-INPT NOR GATE IC:TTL HS QUAD 2-INPT NAND GATE	D1295 01295 04713 07263 01295	SN74H51N SN7475N MC3D01P U6A985249X SN74H00N
A6U94 A6U95 A6U96 A6U97 A6U104	18 20-095 3 18 20-0141 18 20-0186 18 20-0141 18 20-0424	1	IC:CTL TRIPLE 2-2-3 INPT AND GATE IC:TTL QUAD 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL QUAD 2-INPT AND GATE IC:TTL HS HEX INVERTER	14433 04713 07263 04713 04713	MIC 953 MC3001P U6A985649X MC3001P SN74HD4N
A6U105 A6U107	1820-0605 1820-0186	1	IC:TTL HS QUAD 2-INPT NAND GATE IC:CTL DUAL 2-INPT AND GATE	012 95 07263	SN74H01N U6A985649X

REF.				# IN	DICATES SIG	SNAL SOURCE
NO.		BACKPLANE	LOCATION			
A6			•			
21	A1-84*	A4-69	A6-31	A8-7Ø		
228	A2-42	A6-35#	A7-68			
229	A2-45	A6-36*	A7-63			
230	A2-26	A6-56*	A7-67			
231	A2-50	A6-34*	A7-30			
232	A2-72	A6-62*	A7-26			
233	A2-66	A6-7Ø#	A7-29			
234	A2-84	A6-69#	A8-41			
235	A2-75	A6-75*	A8-38			
236	A2-76	A6-57#	A8-45			
237	A2-61	A4-54	A6-63*	A8-65		
238	A2-83	A3-17	A6-59#			
239	A1-9	A2-8Ø	A3-71	A4-24	A6-58#	A8-63
240	A1-3	A2-79	A6-44#			
241	A1-7	A2-78	A6-49*			
242	A1-5	A2-81	A6-46*			
243	A1-12	A2-82	A6-45*			
333	A3-19*	A6-81				
396	A2-46#	A5-78#	A6-32	A7-62*	A8-3*	A9-16*
	A107-16					
397	A2-44#	A5-8Ø#	A6-60	A7-61*	A8-4*	A9-14#
	A107-18					
398	A2-29#	A5-76*	A6-61	A7-60*	A8-5*	A9-18*
	A107-12					
399	A2-30*	A5-59#	A6-33	A7-59*	A8-6*	A9-13*
	A107-14					
400	A2-19#	A5-52*	A6-65	A7-64*	A8-7*	A9-12*
	A107-29				40.0#	AO-1 G#
401	A2-20#	A5-51#	A6-64	A7-57*	A8-8*	A9-10*
	A107-38				40 204	A107-20
402	A2-12#	A5-49*	A6-67	A8-9#	A9-20#	A107-20
403	A2-9 *	A5-43*	A6-66	A8-24*	A9-11*	A107-22
404	A2-53#	A5-31*	A6-52	A8-14*	A9-5*	A107-44
405	A2-54*	A5-32*	A6-51	A8-18#	A9-3*	A107-46
406	A2-43#	A5-29*	A6-54	A8-19*	A9-9*	A107-34
407	A2-49#	A5-30#	A6-53	A8-20*	A9-7*	A107-36
408	A2-31*	A5-10*	A6-38	A8-21*	A9-8*	A107-51
409	A2-21#	A5-8*	A6-37	A8-22*	A9-4*	A107-42
410	A2-10#	A5-6*	A6-42	A8-23*	A9-6*	A107-50
411	A1-14	A2-11*	A4-75	A5-4*	A6-41	A8-33*
	A9-84*	A107-52				
476	A3-44*	A6-30				



See table 4-8 for replaceable parts.

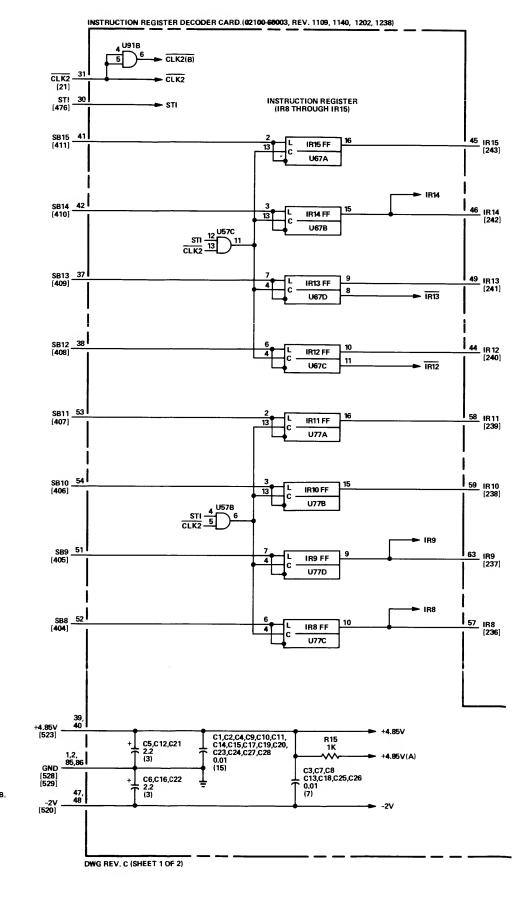
3. C29 NOT USED ON CARD REV. A-1109-22, B-1140-22, AND B-1202-22.

FF DEFINITIONS

RCR = REPEAT COUNT ROLLOVER

NOTES

- RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.
- 2. ALL PIN NUMBERS REFER TO 86-PIN CONNECTOR UNLESS OTHERWISE INDICATED.
- 3. NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.
- 4. DECODED ROM MICROINSTRUCTIONS MNEMONICS AND DECODED BASIC INSTRUCTION MNEMONICS APPEAR IN PARENTHESIS (). *INDICATES A OR B.
- 5. R1 USED ON CARD REV. 1109 ONLY.
- 6. R17 NOT USED ON CARD REV. 1140 AND 1109.
- 7. C29 FIRST USED ON CARD REV. 1238.



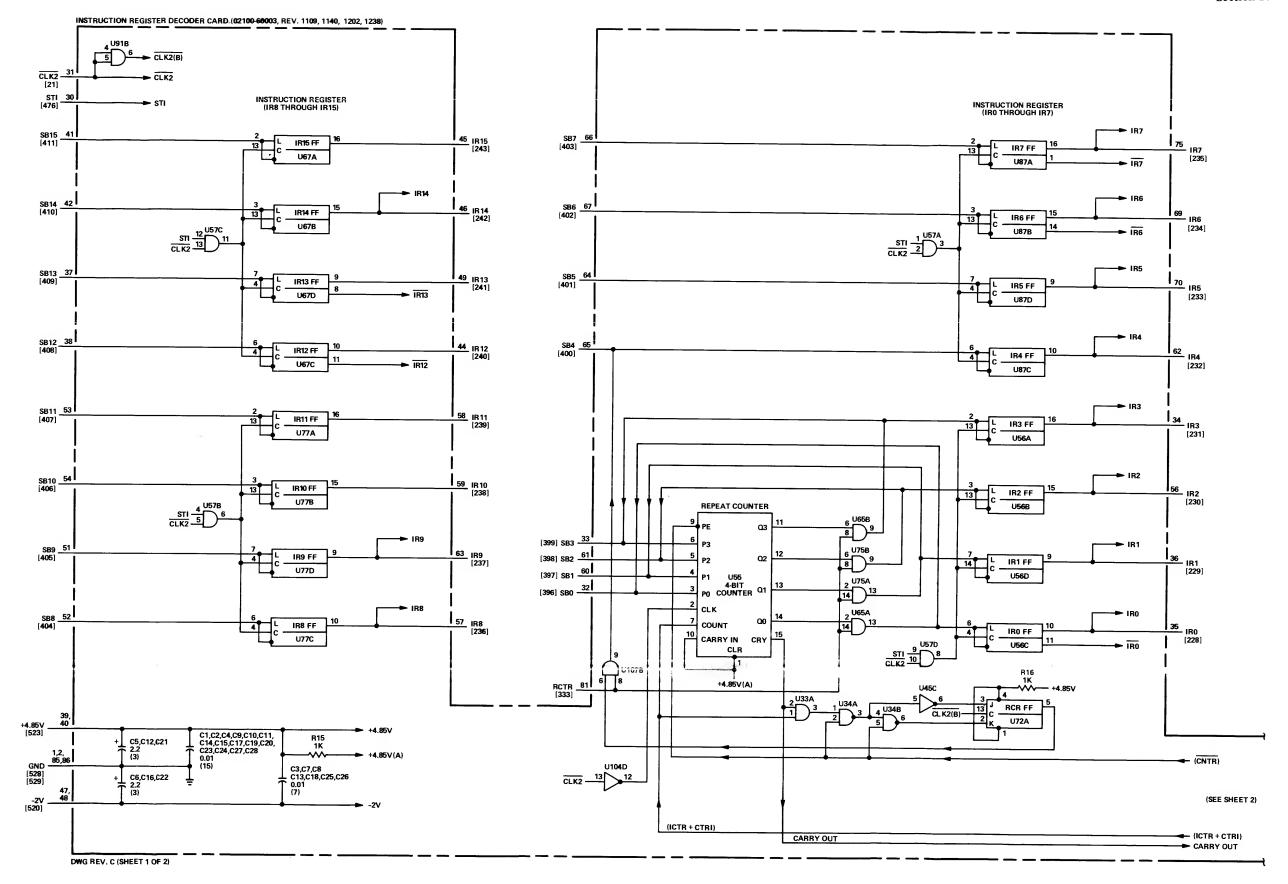


Figure 4-9. A6 Instruction Register Decoder Card, Parts Location and Schematic Diagrams (Sheet 1 of 2)

RCR = REPEAT COUNT ROLLOVER

NOTES:

- RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.
- 2. ALL PIN NUMBERS REFER TO 86-PIN CONNECTOR UNLESS OTHERWISE INDICATED.
- 3. NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.
- 4. DECODED ROM MICROINSTRUCTIONS MNEMONICS AND DECODED BASIC INSTRUCTION MNEMONICS APPEAR IN PARENTHESIS (). *INDICATES A OR B.
- 5. R1 USED ON CARD REV. 1109 ONLY.
- 6. R17 NOT USED ON CARD REV. 1140 AND 1109.
- 7. C29 FIRST USED ON CARD REV. 1238,

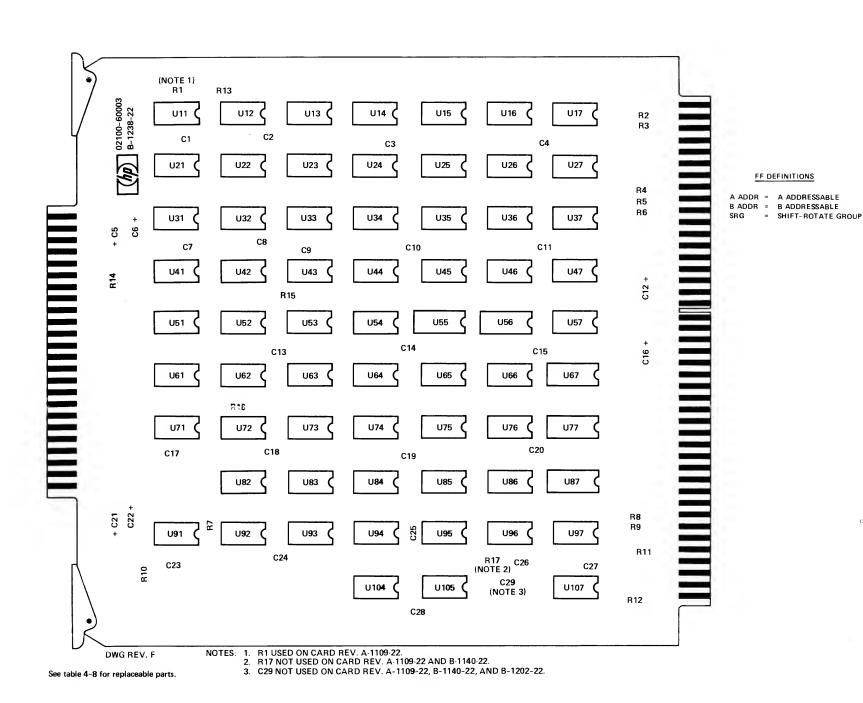
2100A

7

Section IV

(Information continues on next page)

REF.				# IN	DICATES	SIGNAL SOURCE	
NO.		BACKPLANE	LOCATION				
A6							
1	A5-26*	A6-78					
2	A3-52	A6-5*					
5	A4-13	A5-58*	A6-79				
7	A4-35	A5-21#	A6-77				
8	A4-41*	A5-7	A6-3#				
9	A4-9*	A5-23	A6-17*				
ıí	A4-84#	A6-18					
12	A4-33	A6-25*					
13	A3-43	A4-32	A6-7*				
14	A4-14#	A5-41	A6-84*				
23	A1-70*	A6-55					
27	A3-50	A4-56	A5-19*	A6-11			
32	A6-73#	A9-36*	A24-55#	A107-76			
39	A4-51*	A6-83					
41	A3-61*	A6-15					
44	A4-10	A6-82*	A24-22				
48	A4-23*	A6-80					
55	A1-80	A3-35#	A6-43				
223	A1-83	A6-21*	A7-38				
257	A4-8*	A5-24	A6-20*				
274	A6-13	A8-80*					
275	A6-4*	A8-36	A24-51				
292	A4-68*	A6-8 A2-70	A24-31 A4-30	A6-9	A7-20	A8-75	
335	A1-8* A107-82	AZ-10	A4-30	A0-9	A1-20	A0 13	
336	A4-67*	A6-68					
338	A2-32*	A6-16					
339	A2-33*	A6-14					
340	A2-28*	A6-10					
341	A2-27*	A6-12					
342	A2-22*	A6-22					
343	A2-23*	A6-23					
344	A2-16#	A6-24					
345	A2-17*	A6-26					
376	A6-74*	A9-34#	A24-57*	A107-75			
377	A3-31	A6-27*					
430	A1-44	A6-28*					
441	A2-77#	A3-84	A4-81	A6-6*			
442	A3-65	A4-6	A6-71*				
443	A4-50	A6-5Ø*					
451	A3-62	A4-12	A6-72*	50	7		
454	A1-55	A2-62	A3-42	A4-52	A6-76*		
486	A5-25*	A6-19					
502	A1-13#	A6-29					



U22E 10 ALU15 SPECIAL FIELD DECODER 1 11 (L1) RIR6 — (CNTR) U35 (SRG1) DECODER 4 4 RIR5 23 (SRG2) (AAB) [342] 11 (ECYN) (ASG1) DECODER 4 13 NC (CW) U37B 1 2 4 5 U37C 5 U45A 1 FRZ 43 2 14 1 2 U96A U95A [55] R9 237 TBZ -(CNTR) -(SEE SHEET 1) (ICTR + CTRI) — CARRY OUT — DWG REV. D (SHEET 2 OF 2) SEE SHEET 1 FOR NOTES

INSTRUCTION REGISTER DECODER CARD (02100-60003, REV. 1109, 1140, 1202, 1238)

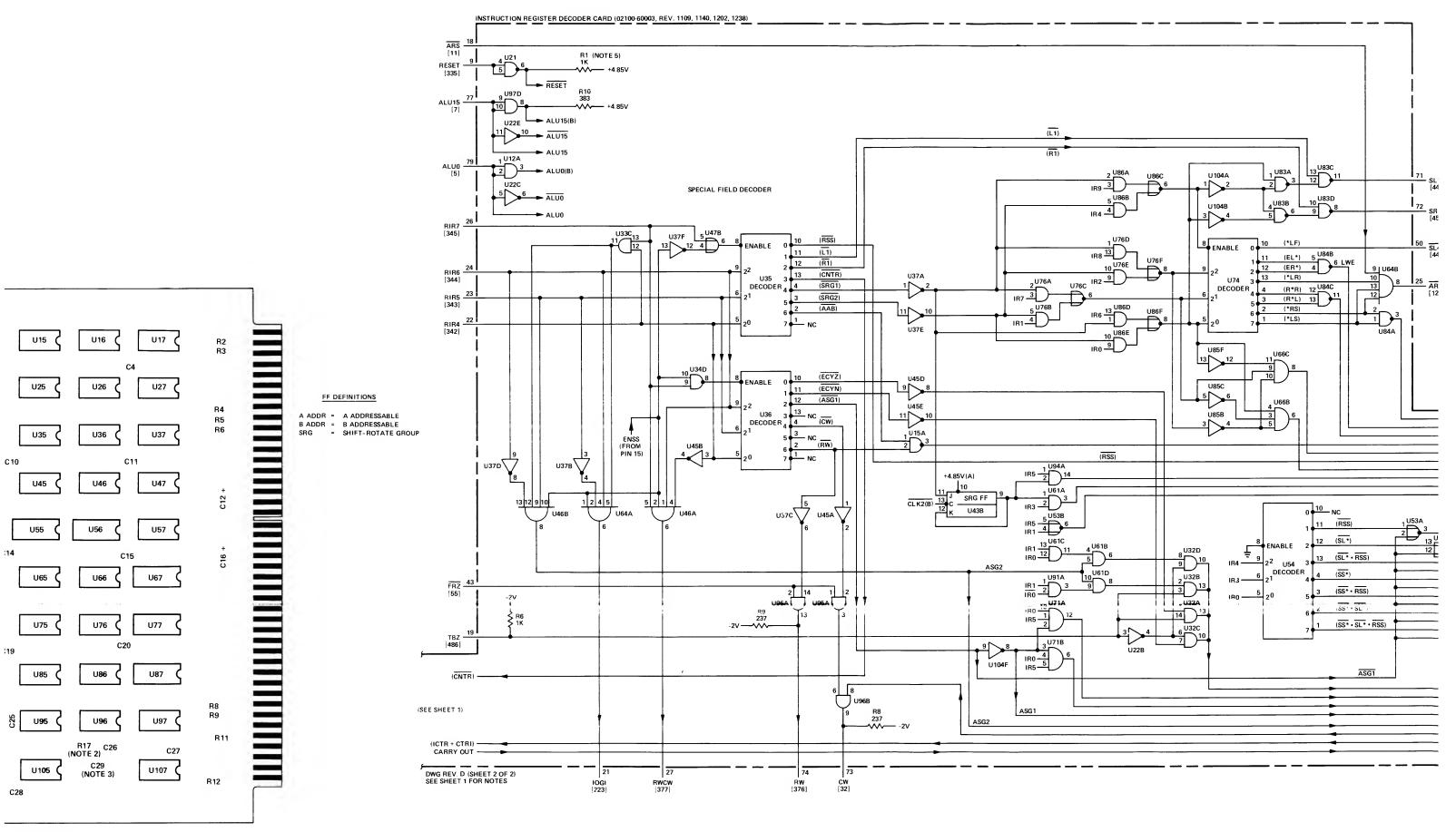
--- +4.85V

R1 (NOTE 5) 1K

ARS -[11]

ALU15 77

RESET (335)



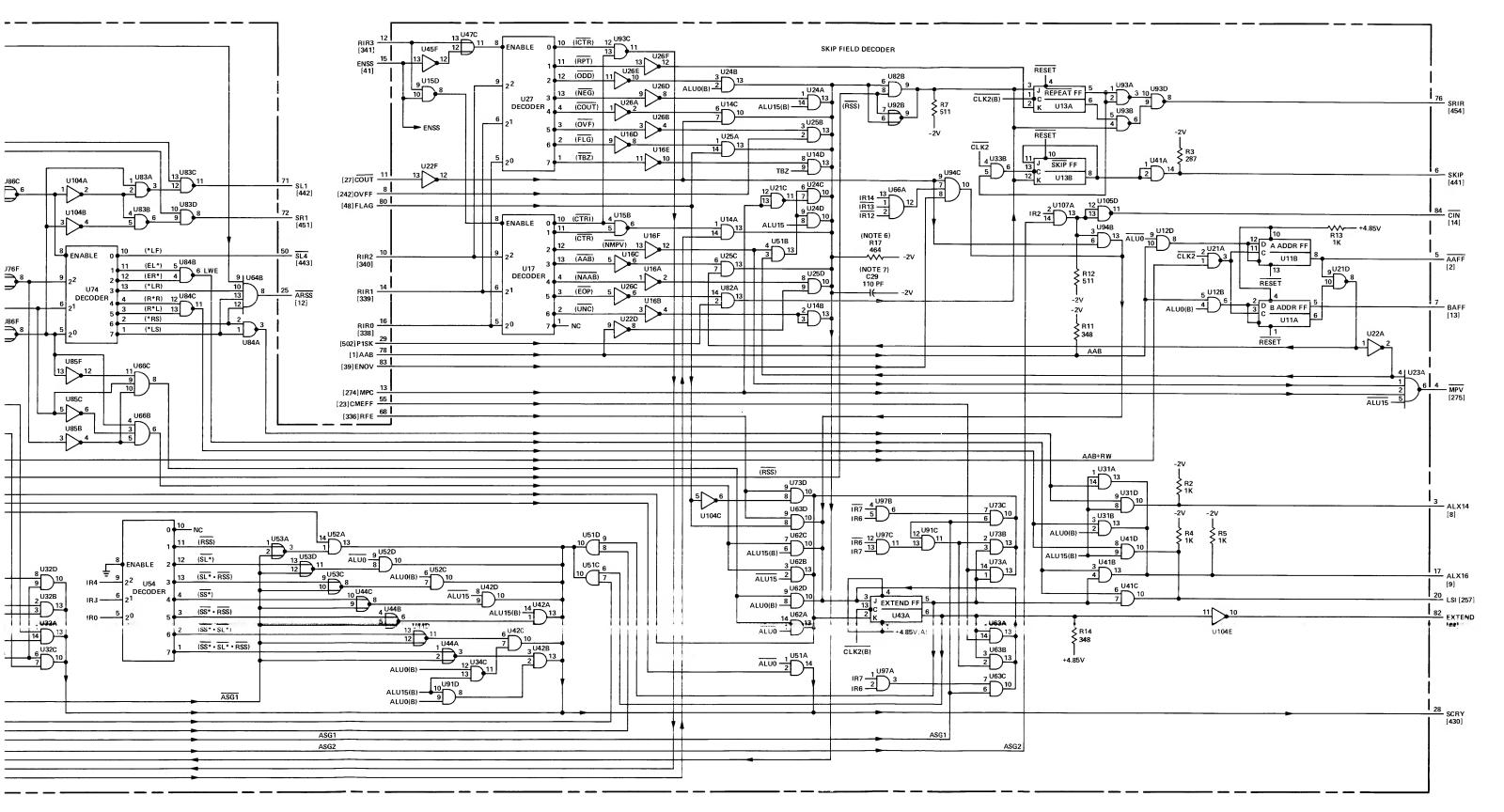


Figure 4-9. A6 Instruction Register Decoder Card, Parts Location and Schematic Diagrams (Sheet 2 of 2)

Table 4-9. A7 I/O Control Card, Replaceable Parts

Reference Designation	HP Part Number	Oty	Description	M t r Code	Mfr Part Numbe
A7 A7C1 A7C2 A7C3 A7C4	C2100-60024 0180-0197 0180-0197 0160-2055 0180-2126	1 10 23 1	I/D CONTROL CARO C:FXO ELECT 2.2 UF 10% 20VDCW C:FXO ELECT 2.2 UF 10% 20VDCW C:FXO CER D.01 UF +80-20% 100VOCW C:FXD ELECT 1.5 UF 5% 35VOCW	28480 56289 56289 56289 2848D	02100-6D024 1500225X902DA2-0YS 1500225X902DA2-DYS C023F101F103ZS22-CDH 0180-2126
A7C5 A7C6 A7C7 A7C8 A7C9	0160-2055 0160-2055 0160-2055 0160-2055 0180-0197		C:FXD CER D.01 UF +80-20% 100V0CW C:FXO CER 0.01 UF +80-20% 100V0CW C:FXO CER 0.01 UF +80-20% 1D0V0CW C:FXO CER 0.01 UF +8D-20% 1D0V0CW C:FXO ELECT 2.2 UF 10% 20V0CW	56289 56289 56289 56289 56289	C023F101F103ZS22-CDH CD23F101F103ZS22-CDH C023F101F103ZS22-COH C023F101F103ZS22-CDH 1500225X9020A2-DYS
A7C10 A7C11 A7C12 A7C13 A7C14	0180-0197 0160-2055 016D-2D55 0160-2D55 016D-2D55		C:FXD ELECT 2.2 UF 10% 20VDCW C:FXD CER 0.01 UF +80-20% 1DDVOCW C:FXD CER 0.01 UF +8D-20% 1D0VOCW C:FXO CER 0.01 UF +80-20% 1D0VOCW C:FXO CER 0.01 UF +80-20% 1D0VOCW	56289 56289 56289 56289 56289	15D0225X9D20A2-DYS C023F1D1F1D3Z522-CDH C023F101F103Z522-COH C023F101F103Z522-COH C023F101F103Z522-CDH
A7C15 A7C16 A7C17 A7C18 A7C19	D160-2055 0160-2D55 0160-2055 0160-2D55 0160-2D55		C:FXD CER 0.01 UF +8D-20% 100V0CW C:FXD CER D.01 UF +80-20% 1D0VDCW C:FXD CER 0.01 UF +80-20% 100V0CW C:FXO CER 0.D1 UF +8D-20% 100V0CW C:FXO CER 0.01 UF +8D-20% 100V0CW	562 89 562 89 562 89 562 89 562 89	C023F101F1D3ZS22-C0+ C023F101F103ZS22-C0+ C023F101F103ZS22-C0+ C023F101F103ZS22-C0+ C023F101F103ZS22-CD+
A7C20 A7C21 A7C22 A7C23 A7C24	0180-D197 0180-D197 0160-2055 0160-2055 0160-2055		C:FXO ELECT 2.2 UF 1D% 20VDCW C:FXO ELECT 2.2 UF 10% 20VDCW C:FXO CER D.01 UF +8D-20% 100VOCW C:FXO CER 0.01 UF +8D-20% 100VDCW C:FXO CER 0.01 UF +8D-20% 100VOCW	56 89 56 89 56 89 56 89 56 89	150D225X9020A2-DYS 150D225X9020A2-DYS C023F101F103ZS22-COH C023F101F1D3ZS22-COH C023F101F103ZS2-COH
A7C25 A7C26 A7C27 A7C28 A7C29	D160-2055 016D-2055 D180-0197 0180-0197 0160-2055		C:FXO CER 0.D1 UF +80-20% 1D0VOCW C:FXD CER 0.01 UF +80-20% 100VOCW C:FXO ELECT 2.2 UF 1D% 20VOCW C:FXD ELECT 2.2 UF 10% 20VDCW C:FXD CER 0.01 UF +80-20% 100VDCW	562 89 562 89 562 89 562 89 562 89	CD23F101F103ZS22=CDH C023F1D1F103ZS22=COH 15D0225X9020A2=DYS 150D225X902DA2=DYS CD23F1D1F103ZS22=COH
A7C3D A7C31 A7C32 A7C33 A7C34 (NOTE 1) A7CR1 A7O1 A7O2 A7O3 A7O4 A7O5	0160-2055 D180-0197 D180-D197 O160-2055 0160-2055 1902-3043 1854-0215 1854-D215 1854-D215 1854-0215	1 5	C:FXO CER 0.01 UF +80-20% 10DVDCW C:FXO ELECT 2.2 UF 10% 20VDCW C:FXD ELECT 2.2 UF 1D% 20VDCW C:FXD CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VDCW DIOOE: BREAKDOWN 3,32V 2% TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN	56289 56289 56289 56289 56289 04713 80131 80131 80131 80131	C023F1D1F1D3ZS22=CDH 1500225X9020A2=DYS 1500225X9D2DA2=DYS CD23F1D1F103ZS22=CDH C023F101F103ZS22=CDH SZ 10939=45 2N3904 2N3904 2N3904 2N3904 2N3904 2N3904 2N3904
A7R1 A7R2 A7R3 A7R5 A7R6	0683-3915 0683-1825 0698-7253 0683-1D25 0698-7229	1 1 2 18	R:FXO COMP 390 OHM 5% 1/4W R:FXO CDMP 1800 DHM 5% 1/4W R:FXO MET FLM 5.11K DHM 2% 1/8W R:FXO CDMP 1000 OHM 5% 1/4W R:FXO FLM 511 DHM 2% 1/8W	01121 01121 28480 01121 28480	C8 3915 C8 1825 O698-7253 C8 1025 D698-7229
A7R7 A7R8 A7R9 A7R1D A7R11	0683-1525 0683-1D25 0683-4715 0698-7236 0698-7228	1 5 23 18	R:FXD CDMP 15DD DHM 5% 1/4W R:FXO CDMP 1000 OHM 5% 1/4W R:FXD CDMP 470 DHM 5% 1/4W R:FXD FLM 1K OHM 2% 1/8W R:FXD FLM 464 DHM 2% 1/8W	01121 01121 01121 28480 28480	C8 1525 C8 1025 C8 4715 0698-7236 D698-7228
A7R12 A7R13 A7R14 A7R15 A7R16	0698-7228 0698-7236 0698-7228 0698-7240 0698-7240	8	R:FXO FLM 464 DHM 2% 1/8W R:FXD FLM 1K DHM 2% 1/8W R:FXO FLM 464 DHM 2% 1/8W R:FXO MET FLM 1.47K DHM 2% 1/8W R:FXD MET FLM 1.47K DHM 2% 1/8W	28480 28480 28480 28480 28480	0698-7228 0698-7236 0698-7228 0698-7240 D698-7240
A7R17 A7R18 A7R19 A7R20 A7R21	0698-7240 0698-7229 0698-3394 D683-4715 D683-10D5	1	R:FXD MET FLM 1.47K DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W R:FXO MET FLM 31.6 DHM 1% 1/2W R:FXD CDMP 470 DHM 5% 1/4W R:FXD CDMP 10 DHM 5% 1/4W	28480 28480 28480 D1121 D1121	0698-7240 D698-7229 D698-3394 C8 4715 C8 1D05
ATR22 ATR23 ATR24 ATR25 ATR26	0683-4715 0683-1015 0683-1015 0683-4715 0683-1015	4	R:FXD COMP 470 DHM 5% 1/4W R:FXD CDMP 10D DHM 5% 1/4W R:FXD CDMP 100 DHM 5% 1/4W R:FXD CDMP 47D DHM 5% 1/4W R:FXD CDMP 47D DHM 5% 1/4W	01121 D1121 D1121 01121 01121	C8 4715 C8 1015 C8 1015 C8 4715 C8 1015
A7R27 A7R28 A7R3D A7R31 A7R32	0683-4715 D683-1D15 D698-7231 D698-724D D698-724D	1	R:FXD CDMP 470 DHM 5% 1/4W R:FXD CDMP 100 DHM 5% 1/4W R:FXO FLM 619 DHM 2% 1/6W R:FXO MET FLM 1.47K DHM 2% 1/8W R:FXO MET FLM 1.47K DHM 2% 1/8W	D1121 01121 28430 28430 28430 28430	C8 4715 C8 1D15 D698-7231 D698-7240 0698-7240
A7R34 A7R35 A7R36 A7R37 A7R38	D698-7228 0698-7229 0698-7236 D698-7240 0698-7217	1	R:FXD FLM 464 DHM 2% 1/8W R:FXD FLM 511 DHM 2% 1/8W R:FXD FLM 1K DHM 2% 1/8W R:FXD MET FLM 1.47K OHM 2% 1/8W R:FXD FLM 162 OHM 2% 1/8W	28430 28430 28430 28430 28430	D698-7228 D698-7229 D698-7236 O698-724D D698-7217

Table 4-9. A7 I/O Control Card, Replaceable Parts (Continued)

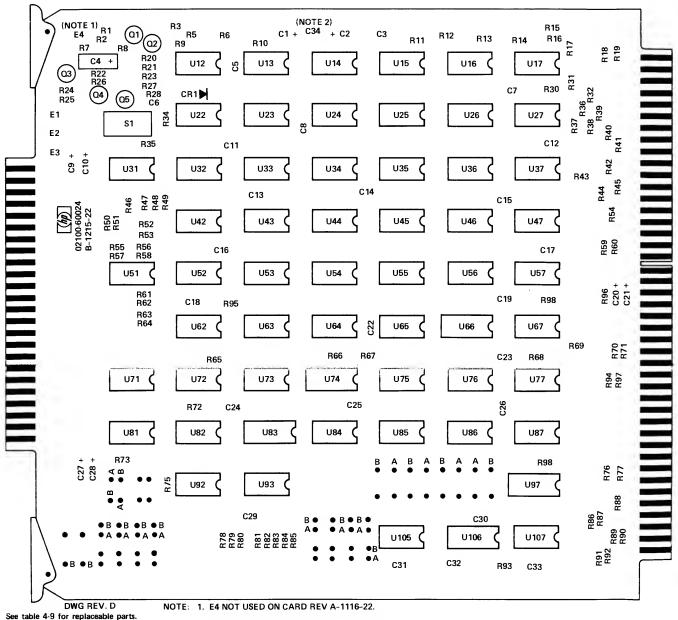
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ATR44	D698-7223		R:FXD FLM 287 OHM 2% 1/8W	284 8D	D698-7223
ATR45	D698-7236		R:FXD FLM 1K OHM 2% 1/8W	284 8D	D698-7236
ATR46	D698-7229		R:FXD FLM 511 OHM 2% 1/8W	284 8D	D698-7229
ATR46	0698-7229		R:FXD FLM 1K OHM 2% 1/8W	284 8D	O698-7236
ATR47	D698-7229		R:FXD FLM 511 OHM 2% 1/8W	284 8D	O698-7229
A7R49	0698-7224	3	R:FXO FLM 316 OHM 2% 1/8W	2848D	0698-7224
A7R5D	0698-7228		R:FXO FLM 464 OHM 2% 1/8W	2848D	0698-7228
A7R51	0698-7228		R:FXD FLM 464 OHM 2% 1/8W	2848D	0698-7228
A7R52	D698-7228		R:FXD FLM 464 OHM 2% 1/8W	2848D	D698-7228
A7R53	D698-7228		R:FXD FLM 464 OHM 2% 1/8W	2848D	D698-7228
A7R54	D698-7236		R:FXD FLM 1K OHM 2% 1/8W	2848D	D698-7236
A7R55	D698-7228		R:FXD FLM 464 OHM 2% 1/8W	2848D	D698-7228
A7R56	D698-7228		R:FXD FLM 464 OHM 2% 1/8W	28480	D698-7228
A7R57	D698-7228		R:FXD FLM 464 OHM 2% 1/8W	2848D	D698-7228
A7R58	C698-7228		R:FXD FLM 464 OHM 2% 1/8W	2848D	0698-7228
ATR59	D698-7236		R:FXO FLM 1K OHM 2% 1/8W	28480	0698-7236
ATR60	D698-7236		R:FXO FLM 1K OHM 2% 1/8W	2848D	0698-7236
ATR61	0698-7228		R:FXO FLM 464 OHM 2% 1/8W	2848D	0698-7228
ATR62	0698-7228		R:FXO FLM 464 OHM 2% 1/8W	2848D	0698-7228
ATR63	D698-7228		R:FXO FLM 464 OHM 2% 1/8W	2848D	0698-7228
A7R64	D698-7228		R:FXD FLM 464 OHM 2% 1/8W	2 84 8D	D698-7228
A7R65	0698-7229		R:FXO FLM 511 OHM 2% 1/8W	284 8D	D698-7229
A7R66	0698-7229		R:FXD FLM 511 OHM 2% 1/8W	2 84 8D	0698-7229
A7R67	D698-7228		R:FXD FLM 464 OHM 2% 1/8W	2 84 8D	D698-7228
A7R68	0698-7229		R:FXD FLM 564 OHM 2% 1/8W	2 84 8D	0698-7229
A7R69	D698-7236	1	R:FXO FLM 1K OHM 2% 1/8W	2848D	D698-7236
A7R70	D698-7233		R:FXD FLM 750 OHM 2% 1/8W	2848D	D698-7233
A7R71	D698-7225		R:FXD FLM 348 OHM 2% 1/8W	2848D	D698-7225
A7R72	D698-7224		R:FXD FLM 316 OHM 2% 1/8W	2848D	D698-7224
A7R73	D698-7236		R:FXD FLM 1K OHM 2% 1/8W	2848D	0698-7236
A7R74	0698-7229		R:FXD FLM 511 OHM 2% 1/8W	2 84 8D	D698-7229
A7R75	0698-7236		R:FXO FLM 1K OHM 2% 1/8W	2 84 8D	0698-7236
A7R76	0698-7229		R:FXD FLM 511 OHM 2% 1/8W	2 84 8D	D698-7229
A7R77	D698-7229		R:FXO FLM 511 OHM 2% 1/8W	2 84 80	D698-7229
A7R78	D698-7229		R:FXD FLM 511 OHM 2% 1/8W	2 84 80	D698-7229
A7R79	0698-7229		R:FXD FLM 511 OHM 2% 1/8W	2848D	0698-7229
A7R80	0698-7229		R:FXO FLM 511 OHM 2% 1/8W	2848D	0698-7229
A7R81	0698-7236		R:FXD FLM 1K OHM 2% 1/8W	2848D	0698-7236
A7R82	0698-7236		R:FXO FLM 1K OHM 2% 1/8W	28480	0698-7236
A7R83	0698-7236		R:FXD FLM 1K OHM 2% 1/8W	2848D	0698-7236
A7R84 A7R85 A7R86 A7R87 A7R88	D698-7236 D698-7236 D698-7229 0698-7229 0698-7236		R:FXD FLM 1K OHM 2% 1/8W R:FXD FLM 1K OHM 2% 1/8W R:FXD FLM 511 OHM 2% 1/8W R:FXD FLM 511 OHM 2% 1/8W R:FXD FLM 1K OHM 2% 1/8W	28480 2848D 2848D 2848D 2848D 2848D	0698-7236 D698-7236 D698-7229 D698-7229 D698-7236
A7R89	D698-7236	1	R:FXD FLM 1K OHM 2% 1/8W	28480	D698-7236
A7R90	D698-7229		R:FXD FLM 511 OHM 2% 1/8W	2848D	0698-7229
A7R91	D698-7224		R:FXD FLM 316 OHM 2% 1/8W	28480	0698-7224
A7R92	0698-7236		R:FXD FLM 1K OHM 2% 1/8W	2848D	0698-7236
A7R93	0698-723D		R:FXD FLM 1K OHM 2% 1/8W	2848D	0698-7230
A7R94	D698-7226	1	R:FXO FLM 383 OHM 2% 1/8W	2 84 8D	0698-7228
A7R95	0698-7228		R:FXD FLM 464 OHM 2% 1/8W	284 8D	D698-7228
A7R96	D698-724D		R:FXD MET FLM 1.47K OHM 2% 1/8W	2 84 80	0698-7240
A7R97	0698-7240		R:FXD MET FLM 1.47K OHM 2% 1/8W	2 84 80	0698-7240
A7R98	0698-7229		R:FXO FLM 511 OHM 2% 1/8W	2 84 80	0698-7229
A7S1	3101-1213	1	SWITCH:TOGGLE DPST-D8 SU8-MINIATURE IC:TTL QUAD 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE	81640	T8001
A7U12	1820-0141	8		04713	MC30D1P
A7U13	1820-0186	7		D7263	U6A985649X
A7U14	1820-0605	2		D1295	SN74H01N
A7U15	1820-0370	9		D1295	SN74H0DN
A7U16 A7U17 A7U22 A7U23 A7U24	182D-D613 182D-0141 1820-0512 1820-D372 1820-D371	7 3 2 3	IC:HS HEX INVERTER W/OPEN COLL. IC:TTL QUAD 2-INPT AND GATE IC:TTL DUAL D F/F IC:TTL TRIPLE 3-INPT AND GATE IC:TTL HS TRIPLE 3-INPT NAND GATE	01295 04713 01295 28480 D1295	SN74H05N MC3DD1P SN74H74N 182D-D372 SN74H10N
A7U25 A7U26 A7U27 A7U31 A7U32	1820-0370 1820-0512 1820-0424 1820-0187 1820-0605	5 1	IC:TTL HS QUAD 2-INPT NANO GATE IC:TTL OUAL D F/F IC:TTL HS HEX INVERTER IC:CTL DUAL 2-INPT NOR GATE IC:TTL HS QUAD 2-INPT NAND GATE	01295 01295 04713 07263 01295	SN74H0DN SN74H74N SN74H04N U6A985249X SN74HD1N

Table 4-9. A7 I/O Control Card, Replaceable Parts (Continued)

Reference Designation	HP Part Number	Qty	Description	Mfr Cade	Mfr Part Number
A7U33 A7U34 A7U35 A7U36 A7U37	1820-0512 1820-0370 1820-0373 1820-0379 1820-0186	2 2	IC:TTL OUAL O F/F IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS OUAL 4-INPT NAND GATE IC:TTL HS 4W 2-2-2-3 INPT ANO/OR GATE IC:CTL OUAL 2-INPT AND GATE	01295 01295 01295 01295 01295	SN74H74N SN74H00N SN74H20N SN74H22N U64985649X
A7U42 A7U43 A7U44 A7U45 A7U46	1820-0370 1820-0371 1820-0370 1820-0370 1820-0379		IC:TTL HS QUAD 2-INPT NANO GATE IC:TTL HS TRIPLE 3-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS 4W 2-2-2-3 INPT ANO/DR GATE	01295 01295 01295 01295 01295	SN74H00N SN74H10N SN74H00N SN74H00N SN74H52N
A7U47 A7U51 A7U52 A7U53 A7U54	1820-0186 1820-0613 1820-0613 1820-0141 1820-0371		IC:CTL OUAL 2-INPT AND GATE IC:HS HEX INVERTER W/OPEN COLL. IC:HS HEX INVERTER W/OPEN COLL. IC:TTL QUAO 2-INPT AND GATE IC:TTL HS TRIPLE 3-INPT NANO GATE	0/263 01295 01295 01295 04713 01295	U6A985649X SN74H05N SN74H05N MC3001P SN74H10N
A7U55 A7U56 A7U57(NOTE 1) A7U62 A7U63	1820-0373 1820-0372 1820-0451 1820-0613 1820-0424	1	IC:TTL HS OUAL 4-INPT NANO GATE IC:TTL TRIPLE 3-INPT AND GATE IC:TTL DUAL J-K F/F IC:HS HEX INVERTER W/OPEN COLL. IC:TTL HS HEX INVERTER	01295 28480 04713 01295 04713	SN74H2ON 1820-0372 MC3062P SN74H05N SN74H04N
A7U64 A7U65 A7U66 A7U67 A7U71	1820-0370 1820-0370 1820-0485 1820-0370 1820-0424	1	IC:TTL HS QUAO 2-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:CTL HEX LEVEL RESTORER IC:TTL HS QUAD 2-INPT NANO GATE IC:TTL HS HEX INVERTER	01 2 95 01 2 95 07 2 63 01 2 95 04 7 13	SN74H00N SN74H00N U68981649X SN74H00N SN74H04N
A7U72 A7U73 A7U74 A7U75 A7U76	1820-0613 1820-0613 1820-0301 1820-0141 1820-0609	2 1	IC:HS HEX INVERTER W/OPEN COLL. IC:HS HEX INVERTER W/OPEN COLL. IC:TTL QUAD 8I-STABLE D-LATCH IC:TTL QUAD 2-INPT ANO GATE IC:TTL OUAL J-K F/F W/COM. CLK & RESET	01295 01295 01295 01295 04713	SN74H05N SN74H05N SN7475N MC3001P MC3001P
A7U77 A7U81 A7U82 A7U83 A7U84	1820-0186 1820-0424 1820-0613 1820-0301 1820-0186		IC:CTL DUAL 2-INPT AND GATE IC:TTL HS HEX INVERTER IC:HS HEX INVERTER W/OPEN COLL. IC:TTL QUAD 81-STABLE D-LATCH IC:CTL DUAL 2-INPT ANO GATE	07 2 53 04 7 13 01 2 95 01 2 95 07 2 53	U6A985649X SN74H04N SN74H05N SN7475N U6A985649X
A7U85 A7U86 A7U87 A7U92 A7U93	1820-0186 1820-0186 1820-0141 1820-0141 1820-0141		IC:CTL DUAL 2-INPT ANO GATE IC:CTL OUAL 2-INPT ANO GATE IC:TTL QUAD 2-INPT AND GATE IC:TTL QUAD 2-INPT AND GATE IC:TTL QUAD 2-INPT AND GATE	07253 07253 04713 04713 04713	U6A985649X U6A985649X MC3001P MC3001P MC3001P
A7U97 A7U105 A7U106 A7U107	1820-0482 1820-0424 1820-0482 1820-0141	2	IC:CTL 1 OF 8 OECODER IC:TTL HS HEX INVERTER IC:CTL 1 OF 8 OECODER IC:TTL QUAD 2-INPT AND GATE	07 2 53 04 1 13 07 2 53 04 1 13	U68983849X SN74H04N U68983849X MC3001P

NOTES: 1. Part no. 1820-0695 used on some cards; the two parts are interchangeable.

REF.				# INC	CATES SIG	SNAL SOURCE
NO.	(BACKPLANE L	OCATION			
A7						
17	A7-10	A8-66*	A9-44	A10-21 THE	RU A23-21	
is			A8-51*			J A23-7
22	A1-78#	_	A7-56	A8-42	A9-76	A24-64
	A107-69					
24		A7-25				
30	A7-19*	A9-82	A10-13 THE	RU A23-13		
38	A1-50	A7-4	A8-57*	A9-29	A10-46 THE	RU A23-46
43	A7-42*	A24-12				
45	A7-31*	A9-28				
46	A7-28*	A9-3Ø				
56	A1-65	A7-65*	A8-50*	A24-74		
57		A7-9*				
198	A7-35*		A24-24			
203	A1-22	A7-45*				
204	A7-66	A8-77*				
223		A6-21*	A7-38			
224	A7-37*					
305	A1-6	A7-8*	A24-67	A104-42	A107-70	
		RU A23-66				
306	A7-23*		A10-17 THE	RU A23-17		
309	A7-41*		A9-62			
310		A8-73#				
323		A16-3#				
324		A24-7#				
326		A25TB2-5*		A 4 = 0	A7-20	A8-75
335	A1-8*	A2-70	A4-30	A6-9	AI-EU	MO-13
	A107-82					
374	A1-69	A7-46*	40-C2#	A10-5 THR	1 422-5	
433	A4-70	A7-17	A8-52*	A10-25 TH		
435	A4-72	A7-24	A8-59*	Ald-124 TI	HRU A23-12	•
440			A7-63	A10-12- TH	DII 423-22	-
473	A7-3	A8-55#	A9-43 A8-49#	A10-22 THR		
475	A4-73	A7-6 A9-83*	40-47"	יאחו ל-שנא	O MEJ 7	
487 488	A7-32 A7-27	A9-83* A9-79*				
		A23-8,23	A16-8 THR	1 A22-8		
496 497	A7-50* A7-55*	A15-8,23	A10-8 THR			
497	A7-35" A3-37	A7-11	A8-81*			
770	43-31	77 11	HO 01	,		



FF DEFINITIONS

DIR = DIRECTION
F6 = FLAG 6
F7 = FLAG 7
F86 = FLAG BUFFER 6
F87 = FLAG BUFFER 7
IENS = INTERBUPT ENABLE 6

IEN5 = INTERRUPT ENABLE 5
INC = INTERRUPT SYSTEM CONTROL
INT1 = INTERRUPT 1

INT1 = INTERRUPT 1 INT2 = INTERRUPT 2

INDIZ = INTERRUPT 2
IOGM = INPUT/OUTPUT GROUP MODE
IRO4 = INTERRUPT REQUEST 4
IRO6 = INTERRUPT REQUEST 6

IRQ7 = INTERRUPT REQUEST 7
RSP = RESTART PULSE

 RESISTANCE VALUES ARE IN OHMS AND AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.

 INDICATES PIN NUMBERS OF 48-PIN CON-NECTOR. ALL OTHER PIN NUMBERS ARE FOR 86-PIN CONNECTOR.

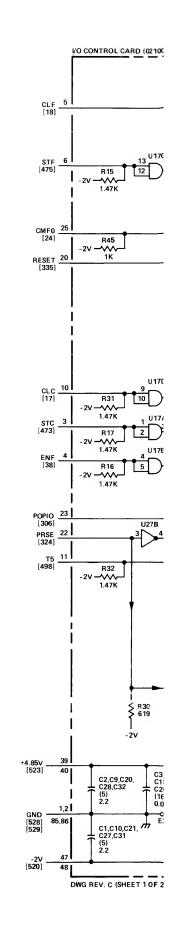
3. NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.

4. JUMPERS W1 THRU W16 ARE INSTALLED FOR OPTIONAL I/O EXTENSION OR MULTIPLEXED I/O CAPABILITY ONLY.

CARD REV. 1144 CONNECTED AS SHOWN BY DASHED LINE A; CARD REV. 1116 CONNECTED AS SHOWN BY DASHED LINE B.

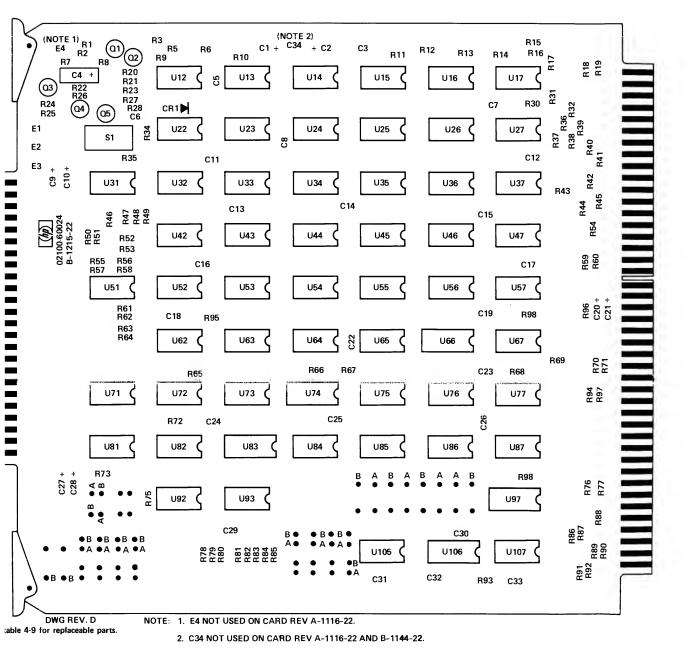
6. E4 NOT USED ON CARD REV. 1116.

7. C34 FIRST USED ON CARD REV. 1215.



2. C34 NOT USED ON CARD REV A-1116-22 AND B-1144-22.

30A



FF DEFINITIONS

DIR = DIRECTION

F6 F7 = FLAG 6

= FLAG 7 = FLAG BUFFER 6 = FLAG BUFFER 7 FR6

FB7 IEN5 = INTERRUPT ENABLE 5

INC = INTERRUPT SYSTEM CONTROL INT1 = INTERRUPT 1

INT2 = INTERRUPT 2

IOGM = INPUT/OUTPUT GROUP MODE IRQ4 = INTERRUPT REQUEST 4

IRQ6 = INTERRUPT REQUEST 6

IRQ7 = INTERRUPT REQUEST 7
RSP = RESTART PULSE

RESISTANCE VALUES ARE IN OHMS AND AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.

* INDICATES PIN NUMBERS OF 48-PIN CON-NECTOR. ALL OTHER PIN NUMBERS ARE FOR 86-PIN CONNECTOR.

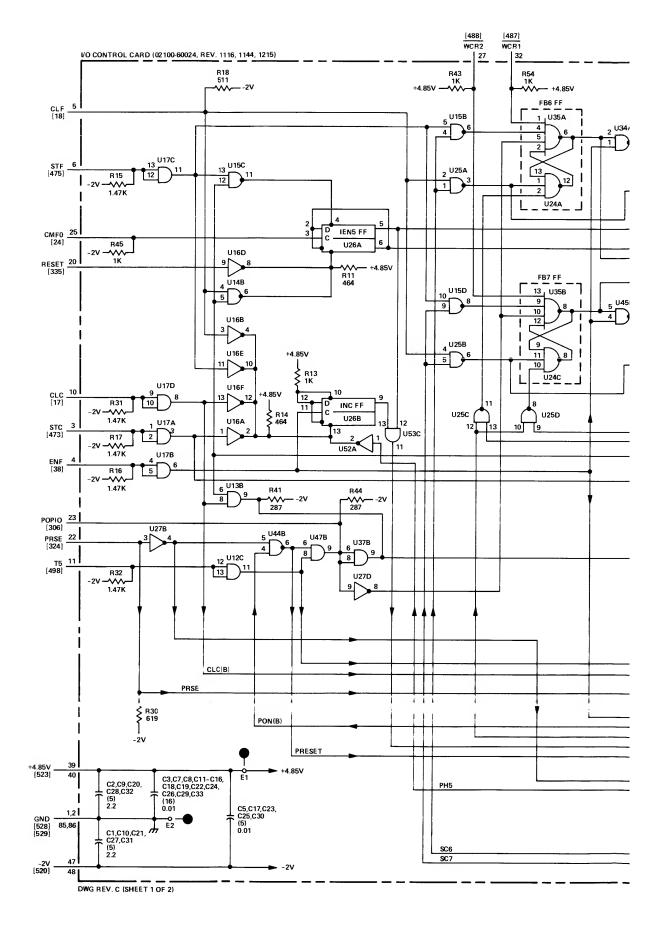
NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.

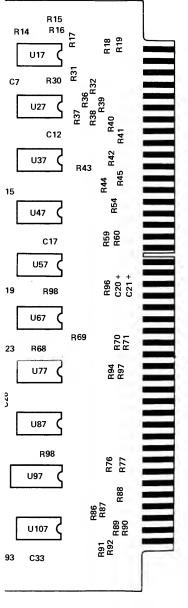
JUMPERS W1 THRU W16 ARE INSTALLED FOR OPTIONAL I/O EXTENSION OR MULTIPLEXED I/O CAPABILITY ONLY.

CARD REV. 1144 CONNECTED AS SHOWN BY DASHED LINE A; CARD REV. 1116 CONNECTED AS SHOWN BY DASHED

6. E4 NOT USED ON CARD REV. 1116.

C34 FIRST USED ON CARD REV. 1215.





FF DEFINITIONS

DIR = DIRECTION F6 = FLAG 6 F7 = FLAG 7

FB6 = FLAG BUFFER 6 FB7 = FLAG BUFFER 7

IEN5 = INTERRUPT ENABLE 5
INC = INTERRUPT SYSTEM CONTROL

INT1 = INTERRUPT 1
INT2 = INTERRUPT 2

IOGM = INPUT/OUTPUT GROUP MODE

IRQ4 = INTERRUPT REQUEST 4

IRO6 = INTERRUPT REQUEST 6

IRO7 = INTERRUPT REQUEST 7

RSP = RESTART PULSE

NOTES

 RESISTANCE VALUES ARE IN OHMS AND AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.

 * INDICATES PIN NUMBERS OF 48-PIN CON-NECTOR. ALL OTHER PIN NUMBERS ARE FOR 86-PIN CONNECTOR.

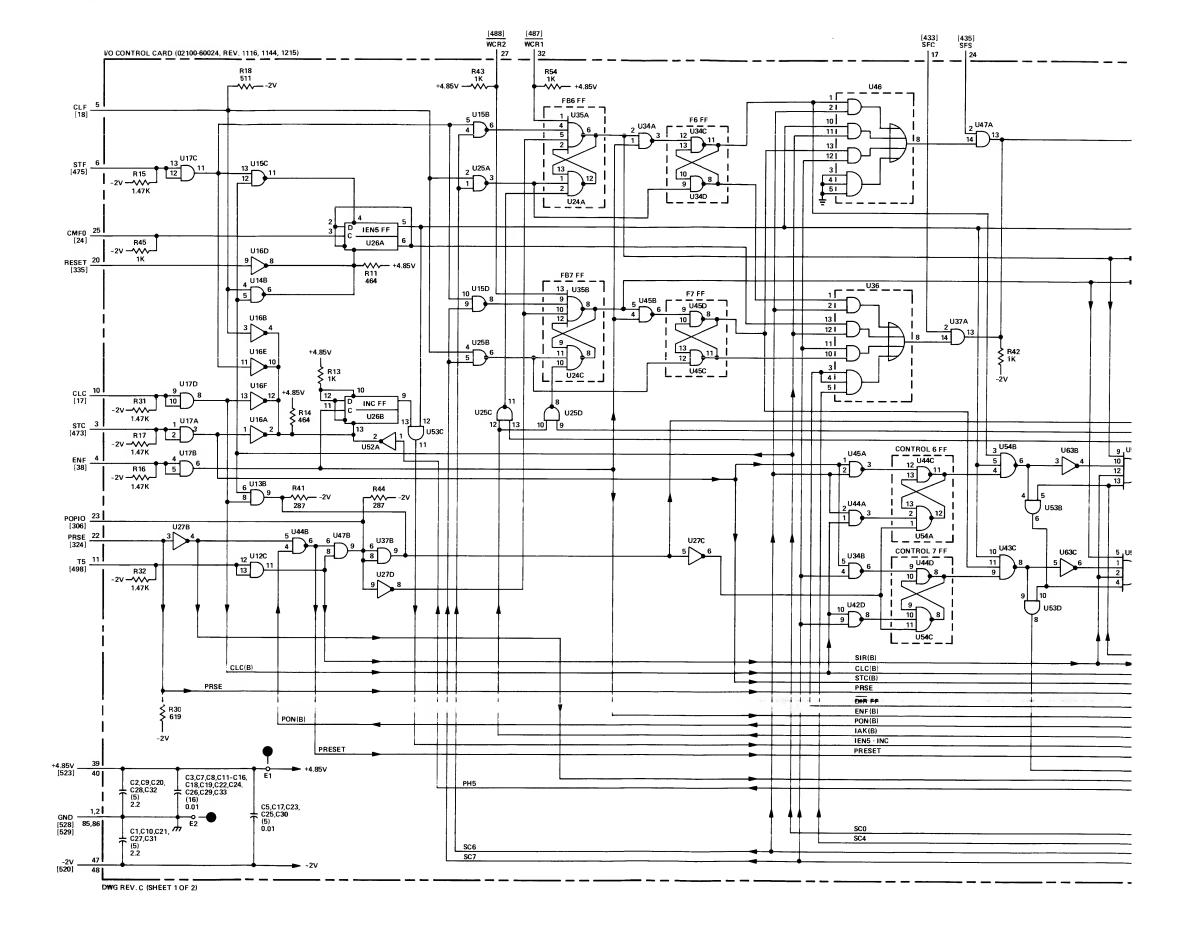
NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.

 JUMPERS W1 THRU W16 ARE INSTALLED FOR OPTIONAL I/O EXTENSION OR MULTIPLEXED I/O CAPABILITY ONLY.

5. CARD REV. 1144 CONNECTED AS SHOWN BY DASHED LINE A; CARD REV. 1116 CONNECTED AS SHOWN BY DASHED LINE B.

6. E4 NOT USED ON CARD REV. 1116.

7. C34 FIRST USED ON CARD REV. 1215.



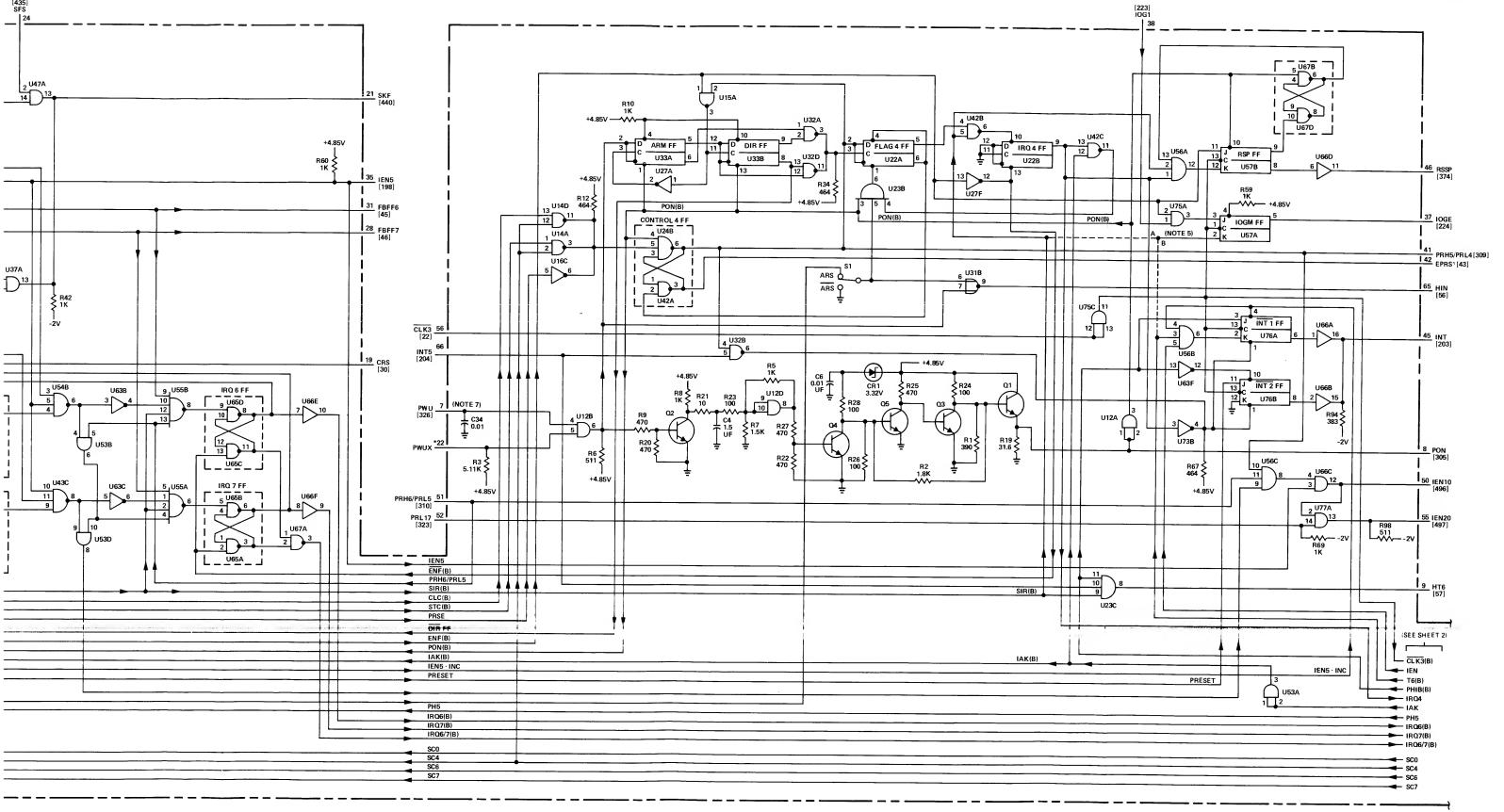
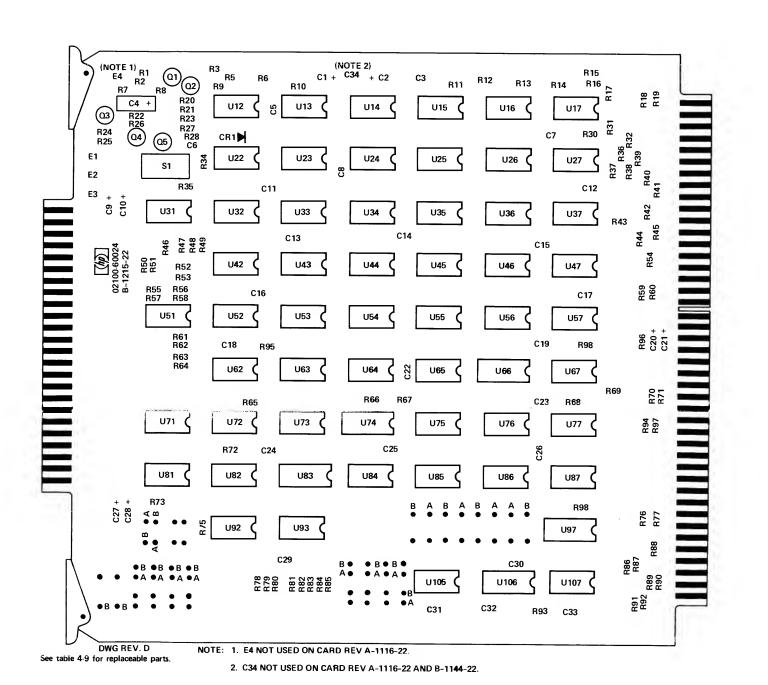


Figure 4-10. A7 I/O Control Card, Parts Location and Schematic Diagrams (Sheet 1 of 2)

(Information continues on next page)

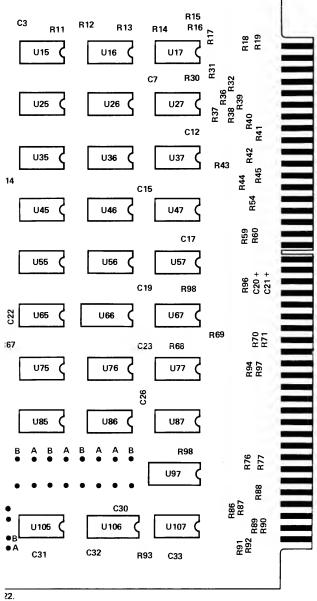
REF.				# IND	ICATES SIG	NAL SOURCE
NO.		BACKPLANE L	OCATION			
A7		A14-68	A17-48 404	THRU A23-	4# 49#	
49	A7-71	A16-4#	A17-4- 47-	THRU A15-	4*.49*	
50	A7-34	A16-49*	A10-10 THE		, ,,,	
58	A7-14*	A8-84		A9-45*	A10-15 THR	U 423-15
222	A3-76	A7-43	A0-40*	A9-45"	MIN-ID INK	0 723 13
	A24-6	40-02#	A24-4	A24-80*	A10-24 THR	U 423-24
225	A7-53	A8-82#	A24-4 A7-68	A24-00.	A10 E4 11	
228	A2-42	A6-35* A6-36*	A7-63			
229	A2-45 A2-26	A6-56*	A7-67			
230		A6-34#	A7-30			
231	A2-50	A6-62*	A7-26			
232 233	A2-72 A2-66	A6-70*	A7-29			
233 245	A7-79	A14-6*	A15-33*	A22-6*	A23-33#	
245	A7-82	A13-6*	A14-33*	A21-6*	A22-33*	
240	A7-78	A12-6*	A13-33*	A20-6*	A21-33*	
248	A7-80	A11-6*	A12-33*	A19-6#	A20-33*	
249	A7-83	A8-67*	A10-6#	A11-33*	A18-6*	A19-33*
250	A7-81	A10-33*	A17-6*	A18-33*		
251	A7-84	A16-6#	A17-33#	.,•		
297	A1-30*	A7-12	A8-71	A24-50		
300	A3-41*	A7-13	A24-56			
332	A3-33*	A7-54				
396	A2-46#	A5-78#	A6-32	A7-62*	A8-3*	A9-16#
	A107-16					
397	A2-44#	A5-80*	A6-60	A7-61*	A8-4*	A9-14*
	A107-18				40 54	40 10#
398	A2-29#	A5-76*	A6-61	A7-60#	A8-5*	A9-18*
	A107-12				40-68	A9-13*
399	A2-30 *	A5-59#	A6-33	A7-59#	A8-6*	A9-13-
	A107-14			47-44	A8-7*	A9-12*
400	A2-19#	A5-52#	A6-65	A7-64*	A0-1-	A9-12-
	A107-29	45 515	11-11	A7-57*	A8-8*	A9-10*
401	A2-20*	A5-51#	A6-64	A7-57-	A0-0	77 10
	A107-38	47-40#	A8-74	A24-8		
412	A4-71	A7-49#	A8-35	ALT U		
413	A3-73	A7-44*	MO-33			
414	A7-33*	A9-50 A9-49				
415	A7-36*	A9-51#	A15-16	A16-34	A23-16	
418 419	A7-69* A7-70*	A9-52*	A14-16	A15-34	A22-16	A23-34
	A7-72*	A9-59*	A13-16	A14-34	A21-16	A22-34
420 421	A7-73*	A9-58*	A12-16	A13-34	A20-16	A21-34
422	A7-74*	A9-60#	A11-16	A12-34	A19-16	A20-34
422 423	A7-75*	A9-56*	A10-16	A11-34	A18-16	A19-34
423 424	A7-76*	A9-54*	A10-34	A17-16	A18-34	
425	A7-77*	A9-57*	A16-16	A17-34		
426	A7-16*	A9-55*		· -		
427	A7-15*	A9-53#	A16-14	A17-14,37	THRU A23-	14.37
428	A7-18*	A9-61#	A16-37	A10-14.37	THRU A15-	14,37
483	A3-26	A7-58	A8-43#	A9-81	A24-66	



FF DEFINITIONS

- C10 = CENTRAL INTERRUPT REGISTER BIT 0 C11 = CENTRAL INTERRUPT REGISTER BIT 1 C12 = CENTRAL INTERRUPT REGISTER BIT 2
- C13 = CENTRAL INTERRUPT REGISTER BIT 3 C14 = CENTRAL INTERRUPT REGISTER BIT 4 C15 = CENTRAL INTERRUPT REGISTER BIT 5

(SEE SHEET 1) -DWG REV. C



R58,464 R56,464 +4.85V R56,464 R52,464 R53,464 FF DEFINITIONS IAO *E C10 = CENTRAL INTERRUPT REGISTER BIT 0 C11 = CENTRAL INTERRUPT REGISTER BIT 1 IA1 *D C12 = CENTRAL INTERRUPT REGISTER BIT 2 IA2 *5 C13 = CENTRAL INTERRUPT REGISTER BIT 3 IA3 -7 | C14 = CENTRAL INTERRUPT REGISTER BIT 4 C15 = CENTRAL INTERRUPT REGISTER BIT 5 1A4 *F IA5 *6 R57 464 +4.85V — VVV--+4.85V — *** -2V —-VVV— -2V —VVV— [332] RCIR -[225] 101 4 5 U92B [297] PH1B [483]T6 -4 U62B U52C Ů 052D N 062D [50] FLG2 -34 [49] FLG1 -49]FLG1 FLG2X *21 FLG3X *4 FLG4X *4 I FLG5X *2 1 FLG6X -INTX *C \$ R46 \$ R72 \$ R36 \$ R49 \$ R48 \$ 511 \$ 316 \$ 511 \$ 316 \$ 511 U73C U62C U51A VU62E U51F R47 1K U63D R95,4 +4.85V ---VV-+4.85V —VV CLK3(B) PH1B(B) IRQ4 (SEE SHEET 1) -IRQ6(B) IRQ7(B) ----SC4 DWG REV. C (SHEET 2 OF 2) SEE SHEET 1 FOR NOTES -22 AND B-1144-22.

I/O CONTROL CARD (02100-60024, REV. 1116, 1144, 1215)

I/O SELECT CODE ENCODER

U72C V82C V072E

U82E U82F

V82D √

R91,316 -2V R65,511 R92,1K -2V

R87,511 -2V

R89,1K -2V

GND -24 IRQ7X -20 |

IRQ3X

IRQ2X

IRQ1X -

[251] IRQ7 [250] IRQ6 83 | [249] IRQ5 -[248] IRQ4 -[248] IRQ4 [247] IRQ3 [246] IRQ2 79 I [245] IRQ1 -

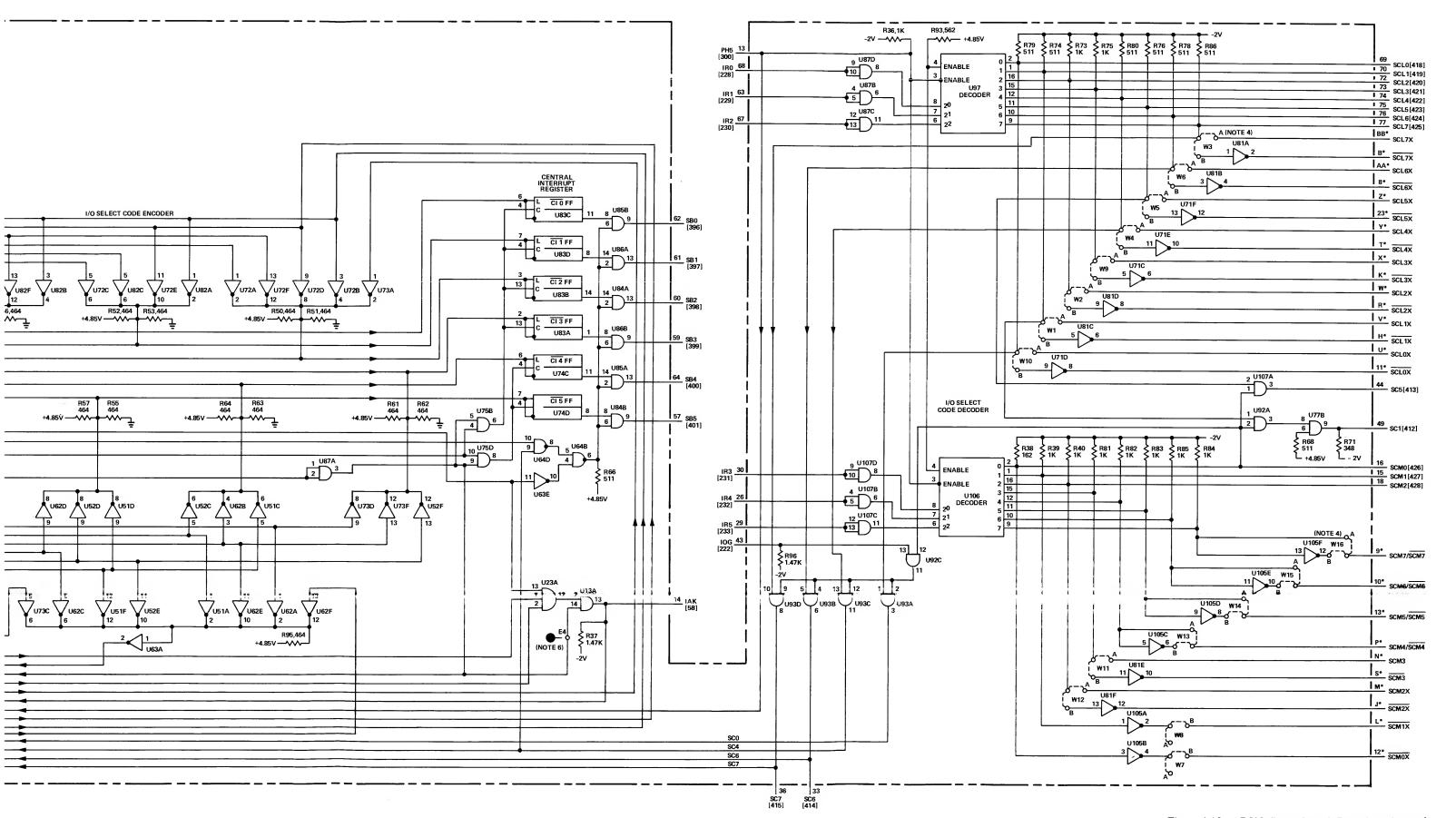


Figure 4-10. A7 I/O Control Card, Parts Location and Schematic Diagrams (Sheet 2 of 2)

Table 4-10. A8 I/O Buffer Card, Replaceable Parts

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A8 A8C1 A8C2 A8C3 A8C4	C2100-60007 0180-0197 0160-2055 0160-2055 0160-2055	1 9 49	I/O 8UFFER CARO C:FXO ELECT 2.2 UF 10% 20VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW	28-80 56-89 56-89 56-89 56-89	32133-60307 1500225x9020A2-0YS C023F101F103Z522-C0H C023F101F103Z522-C0H C023F101F103Z522-C0H
A8C5	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	562:89	C023F101F103ZS22-C0H
A8C6	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	562:89	C023F101F103ZS22-C0H
A8C7	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	562:89	C023F101F103ZS22-C0H
A8C8	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	562:89	C023F101F103ZS22-C0H
A8C9	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	562:89	C023F101F103ZS22-C0H
A8C10	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	5億 89	C023F101F103ZS22-C0H
A8C11	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	56 89	C023F101F103ZS22-C0H
A8C12	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	56 89	C023F101F103ZS22-C0H
A8C13	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	5億 89	C023F101F103ZS22-C0H
A8C14	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	5億 89	C023F101F103ZS22-C0H
A8C15	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	56≨ 89	C023F101F103ZS22-CDH
A8C16	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	56≨ 89	C023F101F103ZS22-COH
A8C17	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	56≵ 89	C023F101F103ZS22-CDH
A8C18	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	56⊉ 89	C023F101F103ZS22-COH
A8C19	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	56⊉ 89	C023F101F103ZS22-CDH
A8C20 A8C21 A8C22 A8C23 A8C24	0160-2055 0180-0197 0180-0197 0160-2055 0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO ELECT 2.2 UF 10% 20VOCW C:FXO ELECT 2.2 UF 10% 20VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW	562 89 562 89 562 89 562 89 562 89	C023F101F103ZS22-C0H 1500225X9020A2-0YS 1500225X9020A2-0YS C023F101F103ZS22-C0H C023F101F03ZS22-C0H
A8C 25 A8C 26 A8C 27 A8C 28 A8C 29	0160-2055 0160-2055 0160-2055 0160-2055 0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW	56789 56789 56789 56789 56789	C023F101F103ZS22-CDH C023F101F103ZS22-COH C023F101F103ZS22-COH C023F101F103ZS22-COH C023F101F103ZS22-COH
A8C 30	0160-2055		C:FXO CER 0.01 UF +80-20% 100VDCW	562 89	C023F101F103ZS22-C0H
A8C 31	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	562 89	C023F101F103ZS22-C0H
A8C 32	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	562 89	C023F101F103ZS22-C0H
A8C 33	0160-2053		C:FXO CER 0.01 UF +80-20% 100VOCW	562 89	C023F101F103ZS22-C0H
A8C 34	0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW	562 89	C023F101F103ZS22-C0H
A8C 35 A8C 36 A8C 37 A8C 38 A8C 39	0180-0197 0180-0197 0160-2055 0160-2055 0160-2055		C:FXO ELECT 2.2 UF 10% 20VOCW C:FXO ELECT 2.2 UF 10% 20VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VOCW	56289 56289 56289 56289 56289	1500225X9020A2-0YS 1500225X9020A2-DYS C023F101F103ZS22-COH C023F101F103ZS22-COH C023F101F103ZS22-COH
A8C40	0160-2055		C:FXD CER 0.01 UF +80-20% 100V0CW	562 89	C023F101F103ZS22-CDH
A8C41	0160-2055		C:FXO CER 0.01 UF +80-20% 100V0CW	562 89	C023F101F103ZS22-COH
A8C42	0160-2055		C:FXD CER 0.01 UF +80-20% 100V0CW	562 89	C023F101F103ZS22-COH
A8C43	0160-2055		C:FXD CER 0.01 UF +80-20% 100V0CW	562 89	C023F101F103ZS22-COH
A8C44	0180-0197		C:FXO ELECT 2.2 UF 10% 20V0CW	562 89	1500225X9020A2-0YS
A8C45 A8C46 A8C47 A8C48 A8C49	0180-0197 0160-2055 0160-2055 0160-2055 0160-2055		C:FX0 ELECT 2.2 UF 10% 20V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW	56289 56289 56289 56289 56289	1500225X9020A2-0YS C023F101F103ZS22-COH C023F101F103ZS22-COH C023F101F103ZS22-COH C023F101F103ZS22-COH
A8C50	0160-2055		C:FX0 CER 0.01 UF +80-20% 100V0CW	562 89	C023F101F103ZS22-CDH
A8C51	0160-2055		C:FX0 CER 0.01 UF +80-20% 100V0CW	562 89	C023F101F103ZS22-C0H
A8C52	0160-2055		C:FX0 CER 0.01 UF +80-20% 100V0CW	562 89	C023F101F103ZS22-CDH
A8C53	0180-0197		C:FX0 ELECT 2.2 UF 10% 20VDCW	562 89	1500225X9020A2-0YS
A8C54	0180-0197		C:FX0 ELECT 2.2 UF 10% 20V0CW	562 89	1500225X9020A2-0YS
A8C55	0160-2055	5	C:FX0 CER 0.01 UF +80-20% 100VOCW	56289	C023F101F103ZS22-C0H
A8C56	0160-2055		C:FX0 CER 0.01 UF +80-20% 100VOCW	56289	C023F101F103ZS22-C0H
A8C57	0160-2055		C:FX0 CER 0.01 UF +80-20% 100VOCW	56289	C023F101F103ZS22-C0H
A8C58	0160-2055		C:FX0 CER 0.01 UF +80-20% 100VOCW	56289	C023F101F103ZS22-C0H
A8E1	0360-0294		TERMINAL:SOLOER POINT	28480	0360-0294
A8E2 A8E3 A8E4 A8E5 A8R1	0360-0294 0360-0294 0360-0294 0360-0294 0698-3443	1	TERMINAL:SOLOER POINT TERMINAL:SOLDER POINT TERMINAL:SOLDER POINT TERMINAL:SOLDER POINT R:FXO MET FLM 287 OHM 1% 1/8W	28 4 80 28 4 80 28 4 80 28 4 80 28 4 80	0360-0294 0360-0294 0360-0294 0360-0294 0698-3443
A8R2	0698-3442	23	R:FXO MET FLM 237 OHM 1% 1/8W	28430	0698-3442
A8R3	0698-3442		R:FXO MET FLM 237 OHM 1% 1/8W	28430	0698-3442
A8R4	0698-3442		R:FXO MET FLM 237 OHM 1% 1/8W	28430	0698-3442
A8R5	0698-3442		R:FXO MET FLM 237 OHM 1% 1/8W	28430	0698-3442
A8R6	0698-3442		R:FXO MET FLM 237 OHM 1% 1/8W	28430	0698-3442
A8R7	0698-3442		R:FXO MET FLM 237 OHM 1% 1/8W	28430	0698-3442
A8R8	0698-3442		R:FXO MET FLM 237 OHM 1% 1/8W	28430	0698-3442
A8R9	0698-3442		R:FXO MET FLM 237 OHM 1% 1/8W	28430	0698-3442
A8R10	0698-3442		R:FXO MET FLM 237 OHM 1% 1/8W	28430	0698-3442
A8R11	0698-3442		R:FXO MET FLM 237 OHM 1% 1/8W	28430	0698-3442

Table 4-10. A8 I/O Buffer Card, Replaceable Parts (Continued)

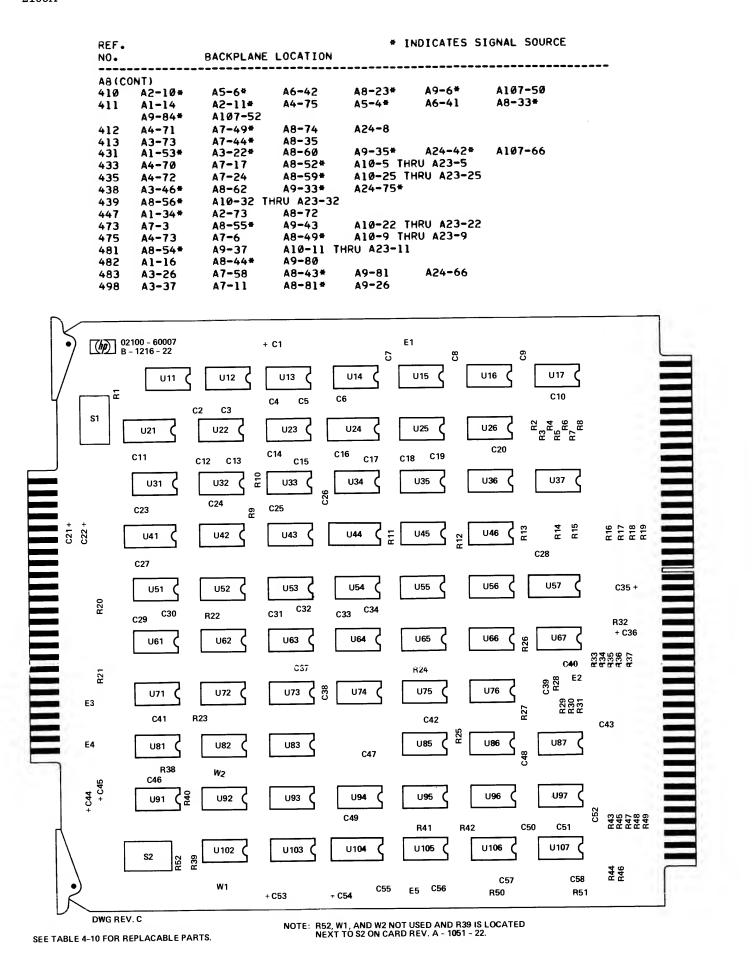
Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
ABR12 ABR13 ABR14 ABR15 ABR15 ABR16	0698-3442 0698-3442 0757-0280 0757-0416 0698-3442	9 10	R:FXD MET FLM 237 DHM 1% 1/8W R:FXO MET FLM 237 DHM 1% 1/8W R:FXD MET FLM 1K DHM 1% 1/8W R:FXD MET FLM 511 DHM 1% 1/8W R:FXO MET FLM 237 DHM 1% 1/8W	28480 28480 28480 28480 28480 28480	0698-3442 0698-3442 0757-0280 0757-0416 0698-3442
A8R17 A8R18 A8R19 A8R20 A8R21	0698-3442 0698-3442 0698-3442 0757-0416 0757-0280		R:FXO MET FLM 237 CHM 1% 1/8W R:FXD MET FLM 237 DHM 1% 1/8W R:FXO MET FLM 237 DHM 1% 1/8W R:FXO MET FLM 511 DHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W	28480 28480 28480 28490 28490	0698-3442 0698-3442 0698-3442 0757-0416 0757-0280
A8R22 A8R23 A8R24 A8R25 A8R26	0757-0416 0757-0280 0757-0280 0757-0416 0698-3442		R:FXD MET FLM 511 DHM 1% 1/8W R:FXD MET FLM 1K CHM 1% 1/8W R:FXD MET FLM 1K DHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 237 DHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0416 0757-0280 0757-0280 0757-0416 0698-3442
A8R27 A8R28 A8R29 A8R30 A8R31	0757-0416 0698-3442 0757-0416 0757-0416 0757-0280		R:FXD MET FLM 511 DHM 1% 1/8W R:FXD MET FLM 237 DHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0416 0698-3442 0757-0416 0757-0416 0757-0280
A8R32 A8R33 A8R34 A8R35 A8R35	0698-3444 0757-0280 0698-3442 0698-3442 0698-3446	1	R:FXD MET FLM 316 DHM 1% 1/8W R:FXO MET FLM 1K DHM 1% 1/8W R:FXO MET FLM 237 OHM 1% 1/8W R:FXO MET FLM 237 DHM 1% 1/8W R:FXO MET FLM 383 DHM 1% 1/8W	28480 28480 28480 28480 28480 28480	0698-3444 0757-0280 0698-3442 0698-3442 0698-3446
A8R37 A8R38 A8R39 A8R40 A8R41	0698-3442 0698-3442 0757-0280 0698-3444 0757-0280		R:FXD MET FLM 237 DHM 1% 1/8W R:FXD MET FLM 237 DHM 1% 1/8W R:FXD MET FLM 1K DHM 1% 1/8W R:FXO MET FLM 316 OHM 1% 1/8W R:FXO MET FLM 1K DHM 1% 1/8W	28480 28480 28480 28480 28480	0698-3442 0698-3442 0757-0280 0698-3444 0757-0280
A8R42 A8R43 A8R44 A8R45 A8R46	0757-0416 0698-3442 0698-3444 0698-3444 0698-3441	2	R:FXD MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 237 OHM 1% 1/8W R:FXD MET FLM 316 OHM 1% 1/8W R:FXD MET FLM 316 OHM 1% 1/8W R:FXD MET FLM 316 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0416 0698-3442 0698-3444 0698-3444 0698-3441
A8R47 A8R48 A8R49 A8R50 A8R51 A8R52(NOTE 2) A8S1 A8S2 A8U11 A8U12 A8U13	0757-0418 0757-0280 0757-0416 0757-0416 0698-3441 0757-0280 3101-1213 3101-1213 1820-0186 1820-0186	1 1 2 34	R:FXD MET FLM 619 OHM 1% 1/8W R:FXD MET FLM 1K DHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 215 OHM 1% 1/8W R: FXO MET FLM 1K OHM 1% 1/8W SWITCH:TOGGLE DPST-DB SUB-MINIATURE SWITCH:TOGGLE DPST-DB SUB-MINIATURE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL OUAL 2-INPT AND GATE	28480 28480 28480 28480 28480 28480 81640 07263 07263	0757-0418 0757-0280 0757-0416 0757-0416 0698-3441 0757-0280 T8001 T8001 U6A985649X U6A985649X U6A985649X
A8U14 A8U15 A8U16 A8U17 A8U21	1820-0186 1820-0186 1820-0186 1820-0186 1820-0301	4	IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT ANO GATE IC:CTL OUAL 2-INPT ANO GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL QUAD BI-STABLE O-LATCH	07263 07263 07263 07263 01295	U6A985649X U6A985649X U6A985649X U6A985649X SN7475N
A8U22 A8U23 A8U24 A8U25 A8U26	1820-0186 1820-0186 1820-0301 1820-0186 1820-0186		IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL QUAO BI-STABLE D-LATCH IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE	07263 07263 01295 07263 07263	U6A985649X U6A985649X SN7475N U6A985649X U6A985649X
A8U31 A8U32 A8U33 A8U34 A8U35	1820-0186 1820-0186 1820-0186 1820-0186 1820-0186		IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL OUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE	07263 07263 07263 07263 07263	U6A985649X U6A985649X U6A985649X U6A985649X U6A985649X
A8U36 A8U37 A8U41 A8U42 A8U43	1820-0186 1820-0186 1820-0301 1820-0186 1820-0186		IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL QUAO BI-STABLE D-LATCH IC:CTL DUAL 2-INPT ANO GATE IC:CTL OUAL 2-INPT ANO GATE	07263 07263 01295 07263 07263	U6A985649X U6A985649X SN7475N U6A985649X U6A985649X
A8U44 A8U45 A8U46 A8U51 A8U52	18 20-030 1 18 20-0186 18 20-0186 18 20-0186 18 20-0186		IC:TTL QUAO BI-STABLE C-LATCH IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT ANO GATE IC:CTL DUAL 2-INPT ANO GATE	01295 07263 07263 07263 07263	SN7475N U6A985649X U6A985649X U6A985649X U6A985649X
A8U53 A8U54 A8U55 A8U56 A8U57	1820-0186 1820-0186 1820-0141 1820-0239 1820-0437	4 1 1	IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL QUAD 2-INPT AND GATE IC:TTL QUAD 2-INPT NOR GATE IC:TTL QUAD D F/F	07263 07263 04713 28480 04713	U6A985649X U6A985649X MC3001P 1820-0239 MC4015P

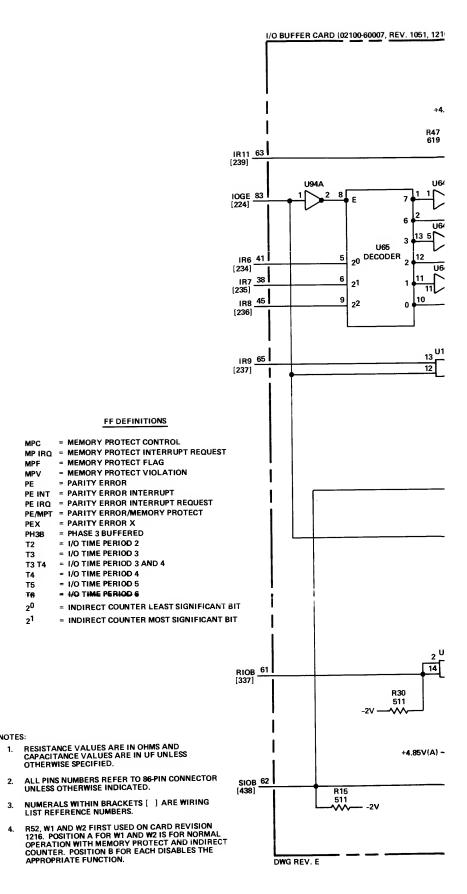
Table 4-10. A8 I/O Buffer Card, Replaceable Parts (Continued)

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A8U61 A8U62 A8U63 A8U64 A8U65	1820-0141 1820-0609 1820-0140 1820-0424 1820-0608	3 2 2 1	IC:TTL QUAO 2-INPT ANO GATE IC:TTL DUAL J-K F/F W/COM. CLK & RESET IC:TTL OUAL 4-INPT ANO BUFFER IC:TTL HS HEX INVERTER IC:TTL 1 OF OECOOER W/ENABLE	0 4713 0 4713 0 4713 0 4713 0 4713	MC3001P MC3061P MC3026P SN74H04N MC4006P
A8U66 A8U67 A8U71 A8U72 A8U73	1820-0376 1820-0512 1820-0609 1820-0371 1820-0370	1 1 1 3	IC:TTL HS OUAL 4—INPT NANO BUFFER IC:TTL OUAL O F/F IC:TTL DUAL J-K F/F W/COM. CLK & RESET IC:TTL HS TRIPLE 3—INPT NAND GATE IC:TTL HS QUAO 2—INPT NAND GATE	01295 01295 04713 01295 01295	SN74H4ON SN74H74N MC3061P SN74H1ON SN74H0ON
A8U74 A8U75(NOTE 1) A8U76(NOTE 1) A8U81 A8U82(NOTE 1)	1820-0372 1820-0451 1820-0451 1820-0370 1820-0451	2 4	IC:TTL TRIPLE 3-INPT ANO GATE IC:TTL OUAL J-K F/F IC:TTL OUAL J-K F/F IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL OUAL J-K F/F	28 80 04 13 04 13 04 13 012 95 04 13	1820-0372 MC3062P MC3062P SN74H00N MC3062P
A8U83 A8U85 A8U86 A8U87 A8U91	1820-0141 1820-0186 1820-0186 1820-0186 1820-0140		IC:TTL QUAO 2-INPT ANO GATE IC:CTL OUAL 2-INPT ANO GATE IC:CTL OUAL 2-INPT ANO GATE IC:CTL OUAL 2-INPT ANO GATE IC:TTL OUAL 4-INPT ANO BUFFER	04713 07263 07263 07263 07263	MC3001P U6A985649X U6A985649X U6A985649X MC3026P
A8U92 A8U93(NOTE 1) A8U94 A8U95 A8U96	1820-0372 1820-0451 1820-0424 1820-0186 1820-0186		IC:TTL TRIPLE 3-INPT ANO GATE IC:TTL OUAL J-K F/F IC:TTL HS HEX INVERTER IC:CTL OUAL 2-INPT ANO GATE IC:CTL OUAL 2-INPT ANO GATE	28 80 04713 04713 07263 07263	1820-0372 MC3062P SN74H04N U6A985649X U6A985649X
A8U97 A8U102 A8U103 A8U104 A8U105	1820-0186 1820-0370 1820-0609 1820-0485 1820-0186		IC:CTL OUAL 2-INPT ANO GATE IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL OUAL J-K F/F W/COM. CLK & RESET IC:CTL HEX LEVEL RESTURER IC:CTL OUAL 2-INPT ANO GATE	07263 01295 04713 07263 07263	U6A985649X SN74H00N MC3061P U6B981649X U6A985649X
A8U106 A8U107 A8W1 A8W2	1820-0141 1820-0186 8159-0005 8159-0005		IC:TTL QUAO 2-INPT ANO GATE IC:CTL OUAL 2-INPT ANO GATE JUMPER WIRE JUMPER WIRE	04713 07263 28480 28480	MC3001P U6A985649X 8159-0005 8159-0005
				-	
				11	

NOTES: 1. Part no. 1820-0695 used on some cards; the two parts are interchangeable. 2. A8R52, A8W1, and A8W2 first used on card rev. 1216.

REF.				* INC	ICATES	SIGNAL	SOURCE
NO.		BACKPLANE (OCATION				
8 A							
17	A7-10	A8-66* A7-5	A9-44 A8-51*	A10-21 THE	8U A23-2 A10-7 T		23-7
18 21	A4-76 A1-84*	A4-69	A6-31	A8-70	,,,	,,,,	*
22	A1-78#	A3-81	A7-56	A8-42	A9-76	A24	4-64
21	A107-69	A8-64*					
31 38	Al-10 Al-50	A7-4	A8-57*	A9-29	A10-46	THRU	A23-46
56	A1-65	A7-65*	A8-50*	A24-74			
58	A7-14#	A8-84	A10-10 THE	RU A23-10			
198 199	A7-35# A1-24	A8-79 A8-68*	A24-24				
204	A7-66	A8-77*					
205	A8-13#	A24-71	A10-26.35	THRU A23-2	26+35 20-38		
206 207	A8-12* A8-11*	A24-70 A24-68	A10-29,38	THRU A23-	30,41		
208	A8-17#	A24-72	A10-45,64	THRU A23-4	45,64		
209	A8-16#	A24-54	A10-42,77	THRU A23-4	+2,77		
210 211	A8-15* A8-10*	A24 - 53 A24 - 63	A10-51,80	THRU A23-5	53.81		
212	A8-32*	A24-61	A10-52,84	THRU A23-9	52,84		
213	A8-31*	A24-32	A10-27-54	THRU A23-2	27,54		
214 215	A8-29# A8-28#	A24-34 A24-46	A10-28+56	THRU A23-	31,58		
216	A8-27#	A24-44	A10-55,60	THRU A23-	55,60		
217	A8-26#	A24-14	A10-57.78	THRU A23-	57,78		
218 219	A8-25* A8-30*	A24-16 A24-20	A10-61-79	THRU A23-	55,82		
22ø	A8-34*	A24-18	A10-74.83	THRU A23-	74,83		
222	A3-76	A7-43	A8-46#	A9-45*	A10-15	THRU	A23-15
224	A24-6 A7-37*	A8-83					
225	A7-53	A8-82*	A24-4	A24-80*	A10-24		
226	A3-77	A8-78#	A9-32	A24-10	A10-20	THRU	A23-20
234 235	A2-84 A2-75	A6-69* A6-75*	A8-41 A8-38				
236	A2-76	A6-57#	A8-45				
237	A2-61	A4-54	A6-63#	A8-65	A	4.0	-43
239	A1-9	A2-80 A8-67*	A3-71 A10-6*	A4-24 All-33*	A6-58* A18-6*		-63 19-33*
249 256	A7-83 A8-76	A107-78*	A10 0"	A11 33		.,	
274	A6-13	A8-8Ø*					
275 294	A6-4* A8-69*	A8-36 A24-52					
295	A1-63	A3-27	A8-58*				
296	A1-41#	A8-53	A24-49	10/ 50			
297 309	A1-30* A7-41*	A7-12 A8-37	A8-71 A9-62	A24-50			
310	A7-51	A8-73*	A) 0L				
335	A1-8*	A2-7Ø	A4-30	A6-9	A7-20	8A	- 75
337	A107-82 A3-34*	A8-61	A9-42#				
396	A2-46#	A5-78#	A6-32	A7-62*	A8-3*	A9	1-16*
207	A107-16	AE-02#	A6-60	A7-61*	A8-4*	A 0	-14#
397	A2-44 + A107-18	A5-80*	AO-08	A7-01-	A0-4"	~ ~ ~	-14"
398	A2-29#	A5-76#	A6-61	A7-60#	A8-5*	A9	-18#
200	A107-12	AE-E0#	A6-22	A7-59#	A8-6*	AG	-13*
399	A2-30# A107-14	A5-59#	A6-33	A7-39-	A0-0"		. 15
400	A2-19#	A5-52*	A6-65	A7-64#	A8-7*	A9	-12*
4.43	A107-29	A5-51#	A6-64	A7-57*	A8-8#	AG	-10*
401	A2-20 # A107-38	A5-51*	MO-04	A1-31-	~O-O-	M 7	10
402	A2-12#	A5-49#	A6-67	A8-9#	A9-20*		07-20
403	A2-9#	A5-43#	A6-66 A6-52	A8-24* A8-14*	A9-11* A9-5*		07-22 07-44
404 405	A2-53# A2-54#	A5-31* A5-32*	A6-52 A6-51	A8-18*	A9-3*		07-46
406	A2-43#	A5-29#	A6-54	A8-19#	A9-9#		07-34
407	A2-49 *	A5-30* A5-10*	A6-53 A6-38	A8-20* A8-21*	A9-7# A9-8#	_	.07 - 36 .07 - 51
408 409	A2-31 # A2-21 #	A5-8#	A6-37	A8-22#	A9-4#		07-42
	=						





* INDICATES SIGNAL SOURCE

NE LOCATI		INDICATI	ES SIGNAL	SOURCE	•••	
A6-42 A4-75				7 - 50 33*		
A8-74 A8-35 A8-66 A8-52 A8-59 A9-33	5 7 A9-35-1 2* A10-5 9* A10-25 3* A24-75 3-32	THRU A23	-5	7-66		
A8-72 A9-43 A8-49 A10-1 A9-80	A10-22)* A10-9 1 THRU A23-	THRU A23 THRU A23 11				
A8-43 A8-81	8* A9-81	A24-6	56			
+ C1	U14 C6	E1 89	U16 C	Ü17 C10		
C4 C5	U24	U25 〈	U26 C20	R3 R3 R5 R5 R6 R7 R8		
C14 C15 T U33	C16 C17	C18 C19	U36 \	U37 \		≣
U43	U44 }	U45 }	U46 }	C58 2 4 8	R16 R17 R18	
U53 C31 C32	U54 C	U55 (U56 (U57 C	C35 +	
U63 C37	U64 C	U65 3	U66 }	U67 C40	######################################	≣
U73	_{ලී} U74 ද	U75 C	U76 }	C39 R28 T0 B3		≣
U83 }	C47	U85 &		U87 (C43	
U93 	U94 C	U95 (U96 \	U97 \	C52 43 45 47 49	
U103	U104	U105	U106 C	U107		
+ C53	+ C54 C55	E5 C56	C57 R50	C58 R51	R44 R46	

FF DEFINITIONS

= MEMORY PROTECT FLAG

= PARITY FRROR = PARITY ERROR INTERRUPT

= PARITY ERROR X

= I/O TIME PERIOD 2

= I/O TIME PERIOD 3 = I/O TIME PERIOD 3 AND 4

= I/O TIME PERIOD 4

= I/O TIME PERIOD 5

= I/O TIME PERIOD 6

= PHASE 3 BUFFERED

MPV

PE INT

PE/MPT

PEX

T2

Т3

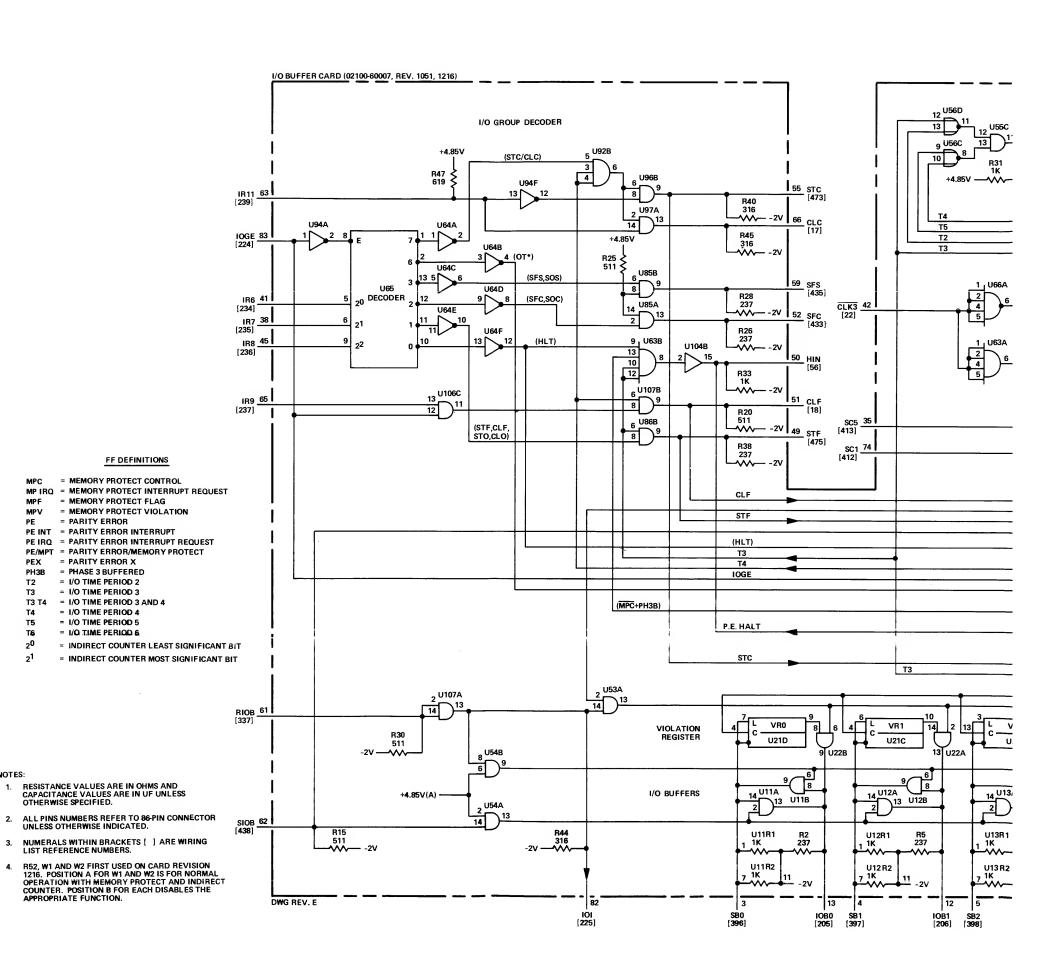
T4 T5

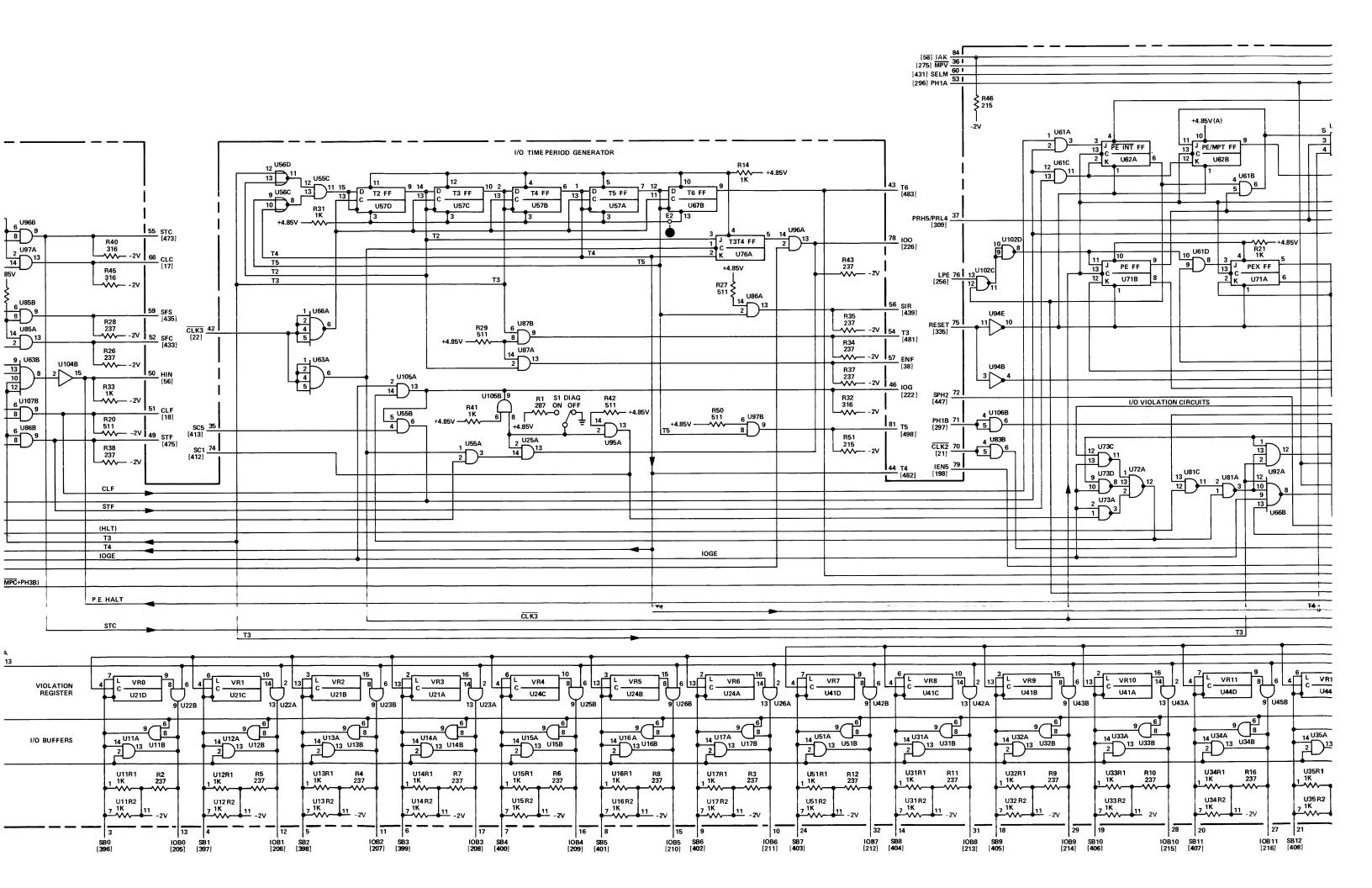
T6 20

NOTES:

T3 T4

NOTE: R52, W1, AND W2 NOT USED AND R39 IS LOCATED NEXT TO S2 ON CARD REV. A - 1051 - 22.





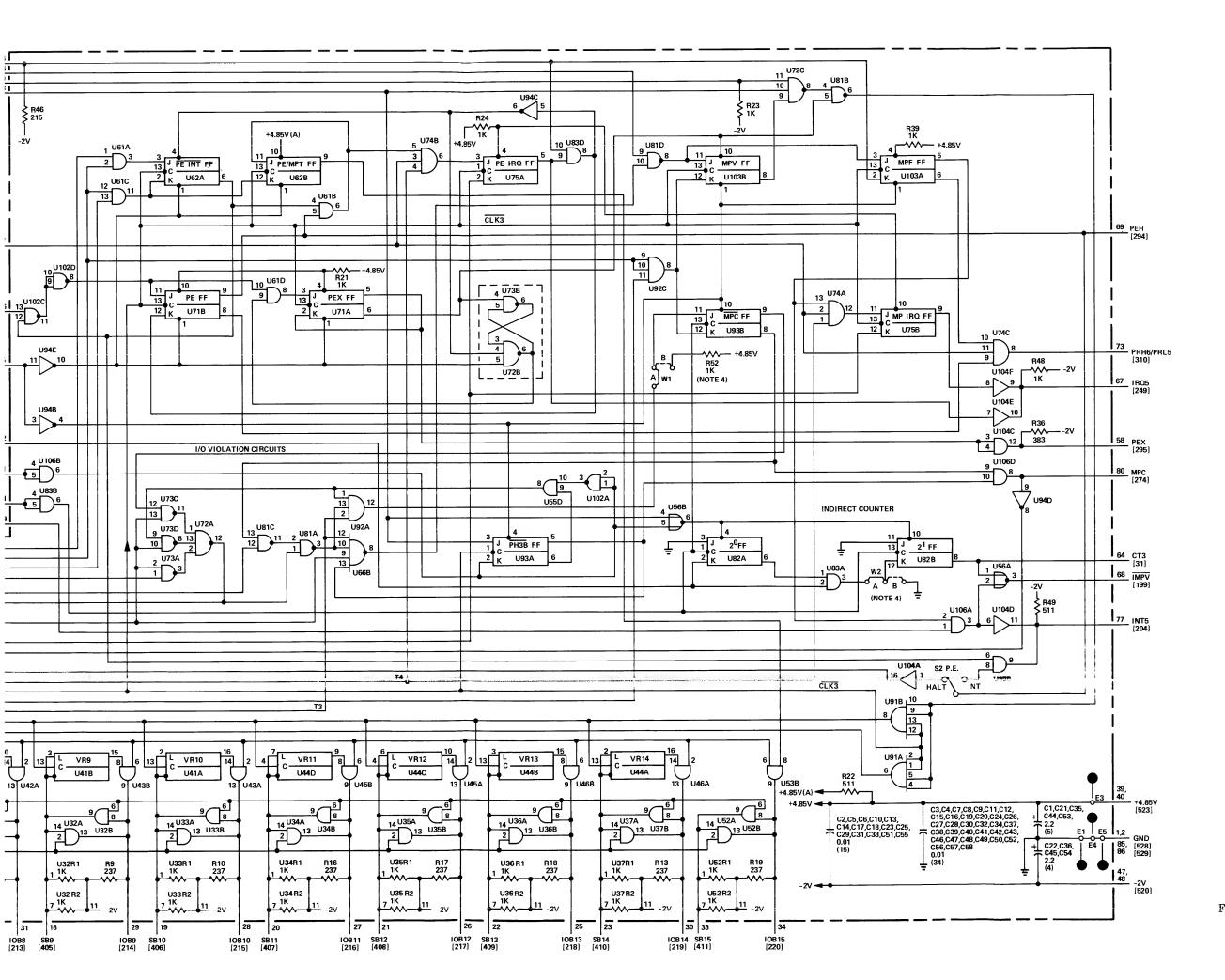


Figure 4-11. A8 I/O Buffer Card, Parts Location and Schematic Diagrams

Table 4-11. A9 Direct Memory Access Card (Accessory), Replaceable Parts

Reference Designation	HP Part Number	Qty	Description	Mtr Code	Mfr Part Number
A9 A9C1 A9C2 A9C3 A9C4	12895-60001 0160-2055 0180-0197 0180-0197 0160-2055	1 21 10	OIRECT MEMORY ACCESS CARO C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO ELECT 2.2 UF 10% 20VDCW C:FXD ELECT 2.2 UF 10% 20VOCW C:FXD CER 0.01 UF +80-20% 100VDCW	2 8+ 80 5 6-89 5 6-89 5 6-89 5 6-89	12895-60001 C023F101F103ZS22-C0H 150D225X9020A2-DYS 150D225X9020A2-OYS C023F101F103ZS22-CDH
A9C5 A9C6 A9C7 A9C8 A9C9	0180-0197 0160-2055 0160-2055 0180-0197 0160-2055		C:FXO ELECT 2.2 UF 10% 20VOCW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO ELECT 2.2 UF 10% 20VOCW C:FXD CER 0.01 UF +80-20% 100VDCW	562 89 562 89 562 89 562 89 564 89	150D225X9020A2-DYS C023F101F103Z522-CDH C023F101F103Z522-COH 1500225X9020A2-DYS C023F101F103Z522-CDH
A9C 10 A9C 11 A9C 12 A9C 13 A9C 14	0160-2055 0160-2055 0160-2055 0160-2055 0160-2055	j	C:FXD CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +80-20% 100VDCW	562 89 562 89 562 89 562 89 562 89	C023F101F103ZS22-C0H C023F101F103ZS22-C0H C023F101F103ZS22-CDH C023F101F103ZS22-CDH C023F101F103ZS22-CDH
A9C15 A9C16 A9C17 A9C18 A9C19	0160-2055 0180-0197 0160-2055 0160-2055 0180-0197		C:FXO CER 0.01 UF +80-20% 100VOCW C:FXD ELECT 2.2 UF 10% 20VDCW C:FXD CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VOCW C:FXD ELECT 2.2 UF 10% 20VDCW	562 89 562 89 562 89 562 89 562 89	C023F101F103ZS22-CDH 150D225X9020A2-DYS C023F101F103ZS22-CDH C023F101F103ZS22-CDH 150D225X9020A2-DYS
A9C2O A9C21 A9C22 A9C23 A9C24	0160-2055 0180-0197 0160-2055 0180-0197 0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW C:FXD ELECT 2.2 UF 10% 20VDCW C:FXO CER 0.01 UF +80-20% 100VDCW C:FXD ELECT 2.2 UF 10% 20VDCW C:FXD CER 0.01 UF +80-20% 100VOCW	56289 56289 56289 56289 56289	C023F101F103ZS22-CDH 150D225X9020A2-0YS C023F101F103ZS22-CDH 1500225X9020A2-0YS C023F101F103ZS22-COH
A9C25 A9C26 A9C27 A9C28 A9C29	0160-2055 0160-2055 0160-2055 0180-0197 0180-0197		C:FXD CER 0.01 UF +80-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW C:FXD CER 0.01 UF +80-20% 100V0CW C:FXD ELECT 2.2 UF 10% 20V0CW C:FXD ELECT 2.2 UF 10% 20V0CW	562 89 562 89 562 89 562 89 562 89	C023F101F103ZS22=C0H C023F101F103ZS22=CDH C023F101F103ZS22=CDH 1500225X9020A2=DYS 1500225X9020A2=DYS
A9C30 A9C31 A9R1 A9R2 A9R3	0160-2055 0160-2055 0757-0407 0757-0407 0757-0407	17	C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW R:FXD MET FLM 200 OHM 1% 1/8W R:FXD MET FLM 200 OHM 1% 1/8W R:FXD MET FLM 200 OHM 1% 1/8W	56289 56289 28480 28480 28480	C023F101F103ZS22-CDH C023F101F103ZS22-CDH 0757-0407 0757-0407 0757-0407
A9R4 A9R5 A9R6 A9R7 A9R8	0757-0407 0757-0407 0757-0407 0757-0407 0757-0407		R:FXD MET FLM 200 OHM 1% 1/8W R:FXO MET FLM 200 OHM 1% 1/8W R:FXO MET FLM 200 OHM 1% 1/8W R:FXD MET FLM 200 OHM 1% 1/8W R:FXO MET FLM 200 OHM 1% 1/8W	28 \$ 80 28 \$ 80 28 \$ 80 28 \$ 80 28 \$ 80	0757-0407 0757-0407 0757-0407 0757-0407 0757-0407
A9R9 A9R10 A9R11 A9R12 A9R13	0757-0407 0757-0407 0757-0407 0698-3439 0757-0280	1 7	R:FXO MET FLM 200 OHM 1% 1/8W R:FXD MET FLM 200 OHM 1% 1/8W R:FXO MET FLM 200 CHM 1% 1/8W R:FXO MET FLM 178 OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W	28 \$ 80 28 \$ 80 28 \$ 80 28 \$ 80 28 \$ 80 28 \$ 80	0757-0407 0757-0407 0757-0407 0698-3439 0757-0280
A9R14 A9R15 A9R16 A9R17 A9R18	0757-0407 0757-0407 0757-0280 0757-0407 0757-0407		R:FXO MET FLM 200 OHM 1% 1/8W R:FXO MET FLM 200 OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/6W R:FXO MET FLM 200 OHM 1% 1/8W R:FXO MET FLM 200 OHM 1% 1/8W	28480 28480 28480 28480 28480 28480	0757-0407 0757-0407 0757-0280 0757-0407 0757-0407
A9R19 A9R20 A9R21 A9R22 A9R23	0757-1094 0757-0416 0757-0416 0757-0280 0757-0416	2 9	R:FXD MET FLM 1.47K OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 1K DHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-1094 0757-0416 0757-0416 0757-0280 0757-0416
A9R24 A9R25 A9R26 A9R27 A9R28	0757-0416 0757-0418 0757-0407 0757-0416 0757-0416	1	R:FXD MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 619 OHM 1% 1/8W R:FXO MET FLM 200 DHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W	284 30 284 30 284 30 284 30 284 30	0757-0416 0757-0418 0757-0407 0757-0416 0757-0416
A9R29 A9R30 A9R31 A9R32 A9R33	0698-3446 0757-1094 0757-0280 0757-0280 0757-0280	1	R:FXO MET FLM 383 OHM 1% 1/8W R:FXO MET FLM 1.47K OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W	28430 28430 28430 28430 28430	0698-3446 0757-1094 0757-0280 0757-0280 0757-0280
A9R34 A9R35 A9R36 A9R37 A9R38	0757-0416 0757-0416 0757-0280 0757-0407 0757-0416		R:FXO MET FLM 511 DHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W R:FXD MET FLM 200 DHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0416 0757-0416 0757-0280 0757-0407 0757-0416
A9R39 A9R40 A9R41 A9R42 A9U11	1810-0080 1810-0080 0698-3443 0698-3443 1820-0233	2 2 16	R:NETWDRK 7 X 500 OHM 5% 0.15W EACH R:NETWORK 7 X 500 DHM 5% 0.15W EACH R:FXD MET FLM 287 OHM 1% 1/8W R:FXO MET FLM 287 OHM 1% 1/8W IC:TTL SYNUP-DN 4-8IT 8INARY COUNTER	284±0 284±0 284±0 284±0 012±5	1810-0080 1810-0080 0698-3443 0698-3443 SN74193N

Table 4-11. A9 Direct Memory Access Card (Accessory), Replaceable Parts (Continued)

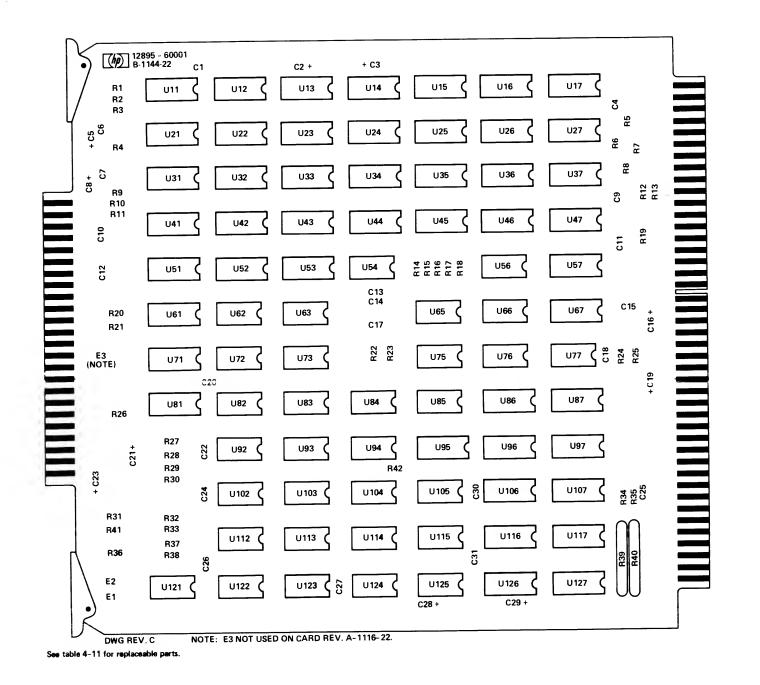
Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A9U12 A9U13 A9U14 A9U15 A9U16	1820-0485 1820-0233 1820-0485 1820-0233 1820-0485	10	IC:CTL HEX LEVEL RESTORER IC:TTL SYNUP-ON 4-BIT BINARY COUNTER IC:CTL HEX LEVEL RESTORER IC:TTL SYNUP-ON 4-BIT BINARY COUNTER IC:CTL HEX LEVEL RESTORER	07263 01295 07263 01295 07263	U68981649X SN74193N U6B981649X SN74193N U6B981649X
A9U17 A9U21 A9U22 A9U23 A9U24	1820-0233 1820-0233 1820-0616 1820-0233 1820-0616	8	IC:TTL SYNUP-ON 4-BIT BINARY COUNTER IC:TTL SYNUP-ON 4-BIT BINARY COUNTER IC:TTL 4-BIT 2-INPT MULTIPLEXER IC:TTL SYNUP-ON 4-BIT BINARY COUNTER IC:TTL 4-BIT 2-INPT MULTIPLEXER	01295 01295 07263 01295 07263	SN74193N SN74193N U78932259X SN74193N U78932259X
A9U25 A9U26 A9U27 A9U31 A9U32	1820-0233 1820-0616 1820-0233 1820-0233 1820-0485		IC:TTL SYNUP-ON 4-BIT BINARY COUNTER IC:TTL 4-BIT 2-INPT MULTIPLEXER IC:TTL SYNUP-ON 4-BIT BINARY COUNTER IC:TTL SYNUP-ON 4-BIT BINARY COUNTER IC:CTL HEX LEVEL RESTORER	01295 07263 01295 01295 07263	SN74193N U78932259X SN74193N SN74193N U68981649X
A9U33 A9U34 A9U35 A9U36 A9U37	1820-0233 1820-0485 1820-0233 1820-0485 1820-0233		IC:TTL SYNUP-ON 4-BIT BINARY COUNTER IC:CTL HEX LEVEL RESTORER IC:TTL SYNUP-ON 4-BIT BINARY COUNTER IC:CTL HEX LEVEL RESTORER IC:TTL SYNUP-ON 4-BIT BINARY COUNTER	01295 07263 01295 07263 01295	SN74193N U68981649X SN74193N U6B981649X SN74193N
A9U41 A9U42 A9U43 A9U44 A9U45	1820-0233 1820-0616 1820-0233 1820-0616 1820-0233		IC:TTL SYNUP-ON 4-BIT BINARY COUNTER IC:TTL 4-BIT 2-INPT MULTIPLEXER IC:TTL SYNUP-ON 4-BIT BINARY COUNTER IC:TTL 4-BIT 2-INPT MULTIPLEXER IC:TTL SYNUP-ON 4-BIT BINARY COUNTER	01295 07263 01295 07263 01295	SN74193N U78932259X SN74193N U78932259X SN74193N
A9U46 A9U47 A9U51 A9U52 A9U53	1820-0616 1820-0233 1820-0616 1820-0371 1820-0371	6	IC:TTL 4-BIT 2-INPT MULTIPLEXER IC:TTL SYNUP-ON 4-BIT BINARY COUNTER IC:TTL 4-BIT 2-INPT MULTIPLEXER IC:TTL HS TRIPLE 3-INPT NANO GATE IC:TTL HS TRIPLE 3-INPT NANO GATE	07263 01295 07263 01295 01295	U78932259X SN74193N U78932259X SN74H10N SN74H10N
A9U54 A9U56 A9U57 A9U61 A9U62	1820-0186 1820-0371 1820-0485 1820-0485 1820-0370	3 7	IC:CTL QUAL 2-INPT ANO GATE IC:TTL HS TRIPLE 3-INPT NANO GATE IC:CTL HEX LEVEL RESTORER IC:CTL HEX LEVEL RESTORER IC:TTL HS QUAO 2-INPT NANO GATE	07263 01295 07263 07263 01295	U6A985649X SN74H10N U68981649X U68981649X SN74H00N
A9U63 A9U65 A9U66 A9U67 A9U71	1820-0451 1820-0451 1820-0141 1820-0485 1820-0616	2	IC:TTL OUAL J-K F/F IC:TTL OUAL J-K F/F IC:TTL QUAO 2-INPT ANO GATE IC:CTL HEX LEVEL RESTORER IC:TTL 4-BIT 2-INPT MULTIPLEXER	04713 04713 04713 07263 07263	MC3062P MC3062P MC3001P U6B981649X U78932259X
A9U72 A9U73 A9U75 A9U76 A9U77	1820-0605 1820-0370 1820-0205 1820-0372 1820-0372	2 1 3	IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL QUAO 2-INPT OR GATE IC:TTL TRIPLE 3-INPT ANO GATE IC:TTL TRIPLE 3-INPT ANO GATE	01295 01295 28480 28480 28480	SN74H01N SN74H00N 1820-0205 1820-0372 1820-0372
A9U81 A9U82 A9U83 A9U84 A9U85	1820-0485 1820-0186 1820-0186 1820-0140 1820-0301	1 5	IC:CTL HEX LEVEL RESTORER IC:CTL OUAL 2-INÞT ANO GATE IC:CTL OUAL 2-INÞT ANO GATE IC:TTL OUAL 4-INÞT ANO BUFFER IC:TTL QUAO 8I-STA8LE D-LATCH	07263 07263 07263 04713 01295	U68981649X U6A985649X U6A985649X MC3026P SN7475N
A9U86 A9U87 A9U92 A9U93 A9U94	1820-0482 1820-0482 1820-0370 1820-0370 1820-0370	4	IC:CTL 1 OF 8 OECOOER IC:CTL 1 OF 8 OECOOER IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL HS QUAO 2-INPT NANO GATE	07263 07263 01295 01295 01295	U68983849X U68983849X SN74H00N SN74H00N SN74H00N
A9U95 A9U96 A9U97 A9U102 A9U103	1820-0301 1820-0482 1820-0482 1820-0301 1820-0370		IC:TTL QUAO BI-STABLE D-LATCH IC:CTL 1 OF 8 OECOOER IC:CTL 1 OF 8 OECOOER IC:TTL QUAO BI-STABLE D-LATCH IC:TTL HS QUAO 2-INPT NANO GATE	01295 07263 07263 01295 01295	SN7475N U6B983849X U6B983849X SN7475N SN7475N
A9U104 A9U105 A9U106 A9U107 A9U112	1820-0371 1820-0371 1820-0301 1820-0301 1820-0424	1	IC:TTL HS TRIPLE 3-INPT NANO GATE IC:TTL HS TRIPLE 3-INPT NANO GATE IC:TTL QUAO 8I-STABLE D-LATCH IC:TTL QUAO BI-STABLE D-LATCH IC:TTL HS HEX INVERTER	01295 01295 01295 01295 01295 04713	SN74H10N SN74H10N SN7475N SN7475N SN7475N SN74H04N
A9U113 A9U114 A9U115 A9U116 A9U117	1820-0512 1820-0372 1820-0371 1820-0615 1820-0615	2	IC:TTL OUAL O F/F IC:TTL TRIPLE 3-INPT ANO GATE IC:TTL HS TRIPLE 3-INPT NANO GATE IC:TTL 8-INPT MULTIPLEXER W/COM.ENABLE IC:TTL 8-INPT MULTIPLEXER W/COM.ENABLE	01295 28480 01295 04713 04713	SN74H74N 1820-0372 SN74H10N FAIR 9312 FAIR 9312
A9U121 A9U122 A9U123 A9U124 A9U125	1820-0613 1820-0141 1820-0370 1820-0512 1820-0605	1	IC:HS HEX INVERTER W/OPEN COLL. IC:TTL QUAO 2-INPT ANO GATE IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL OUAL O F/F IC:TTL HS QUAO 2-INPT NANO GATE	01295 04713 01295 01295 01295	SN 74H 05N MC3001P SN 74H 00N SN 74H 74N SN 74H 01N

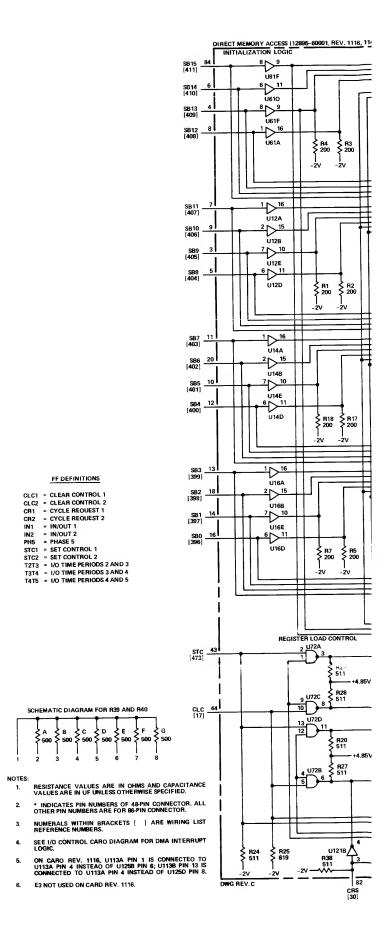
Table 4-11. A9 Direct Memory Access Card (Accessory), Replaceable Parts (Continued)

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A9U126 A9U127	1820-0615 1820-0615		IC:TTL 8-INPT MULTIPLEXER W/COM.ENABLE IC:TTL 8-INPT MULTIPLEXER W/COM.ENABLE	0 4713 04713	FAIR 9312 FAIR 9312

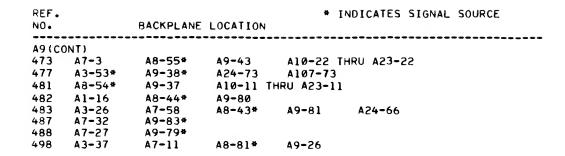
REF.				# INC	ICATES SIG	NAL SOURCE
NO.		BACKPLANE	LOCATION			
A9 17	A7-10	A8-66#	A9-44	A10-21 THE	RU A23-21	
18	A4-76	A7-5	A8-51*	A9-24	A10-7 THRU	A23-7
22	A1-78#	A3-81	A7-56	A8-42	A9-76	A24-64
	A107-69					
30	A7-19*	A9-82	A10-13 TH			
32	A6-73*	A9-36#	A24-55#	A107-76		
36	A9-15#	A10-62 TH		A9-29	A10-46 THR	UL A23-46
38 45	A1-50 A7-31*	A7 - 4 A9 - 28	A8-57*	A7-27	AID-40 IIIN	10 A25 40
45 46	A7-28*	A9-30				
222	A3-76	A7-43	A8-46*	A9-45*	A10-15 THR	RU A23-15
	A24-6					
226	A3-77	A8-78#	A9-32	A24-10	A10-20 THE	RU A23-20
309	A7-41#	A8-37	A9-62			.147 72
334	A1-54#	A3-28*	A4-27	A9-31*	A24-77*	A107-72
337	A3-34*	A8-61 A9-34*	A9-42* A24-57*	A107-75		
376 396	A6-74* A2-46*	A5-78#	A6-32	A7-62#	A8-3#	A9-16#
390	A107-16	MJ-76-	HU-32	AT 02.	70 3	77 19
397	A2-44#	A5-8Ø#	A6-60	A7-61#	A8-4*	A9-14#
	A107-18					
398	A2-29#	A5-76#	A6-61	A7-60*	A8-5*	A9-18#
	A107-12					40.128
399	A2-30#	A5-59#	A6-33	A7-59*	A8-6*	A9-13*
	A107-14	45 508	A((F	47-448	A8-7*	A9-12*
400	A2-19#	A5-52*	A6-65	A7-64#	A0-7-	M9-12"
401	A107-29 A2-20*	A5-51#	A6-64	A7-57*	48-8#	A9-10#
401	A107-38	M2-31"	AU 04	A7 37	A0 0	
402	A2-12#	A5-49#	A6-67	A8-9*	A9-20#	A107-20
403	A2-9#	A5-43*	A6-66	A8-24#	A9-11#	A107-22
404	A2-53*	A5-31*	A6-52	A8-14#	A9-5#	A107-44
405	A2-54*	A5-32*	A6-51	A8-18#	A9-3#	A107-46
406	A2-43*	A5-29#	A6-54	A8-19*	A9-9#	A107-34
407	A2-49*	A5-30*	A6-53	A8-20#	A9-7#	A107-36
408	A2-31*	A5-10*	A6-38	A8-21*	A9-8*	A107-51
409	A2-21 *	A5-8*	A6-37	48-22*	A9-4*	A107-42
410	A2-10*	A5-6*	A6-42	A8-23*	A9-6*	A107-50
411	A1-14	A2-11*	A4-75	A5-4*	A6-41	A8-33*
	A9-84*	A107-52				
414	A7-33*	A9-50				
415	A7-36*	A9-49	415.16	416-26	A22-16	
418	A7-69*	A9-51*	A15-16	A16-34	A23-16 A22-16	A23-34
419	A7-70*	A9-52*	A14-16 A13-16	A15-34 A14-34	A21-16	A22-34
420	A7-72*	A9-59* A9-58*	A12-16	A13-34	A20-16	A21-34
421 422	A7-73# A7-74#	A9-60#	A11-16	A12-34	A19-16	A20-34
423	A7-75*	A9-56*	A10-16	A11-34	A18-16	A19-34
424	A7-76#	A9-54*	A10-34	A17-16	A18-34	
425	A7-77*	A9-57#	A16-16	A17-34		
426	A7-16#	A9-55*				
427	A7-15*	A9-53#	A16-14	A17-14+37	THRU A23-	14,37
428	A7-18*	A9-61#	A16-37	A10-14+37	THRU A15-	
431	A1-53*	43-22*	A8-60	A9-35#	A24-42*	A107-66
432	A3-30*	A4-59*	A9-41#	A107-74		
438	A3-46*	A8-62	A9-33#	A24-75*		
449	A3-38	A9-46#				
455	A9-72	A23-19* A22-19*				
456 457	A9-73 A9-70	A21-19*				
45 <i>1</i> 458	A9-70 A9-71	A20-19*				
459	A9-63	A19-19#				
460	A9-65	A18-19#				
461	A9-75	A17-19#				
462	A9-77	A16-19#				
463	A9-64	A15-19#				
464	A9-68	A14-19#				
465	A9-67	A13-19*				
466	A9-66	A12-19*				
467	A9-69	All-19*				
468	A9-74	A10-19#				

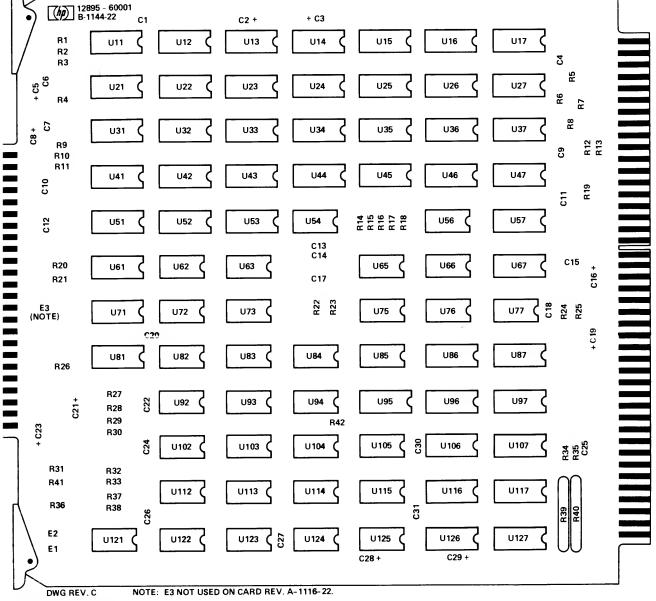
REF.		BACKPLANE	LOCATIO		NDICATES SI	GNAL S	OURCE
A9 (C)	ONT)						
473	A7-3	A8-55*	A9-43	A10-22 1	HRU A23-22		
477	A3-53*	A9-38*	A24-73	A107-73			
481	A8-54*	A9-37	A10-11	THRU A23-11			
482	A1-16	A8-44#	A9-80				
483	A3-26	A7-58	A8-43#	A9-81	A24-66		
487	A7-32	A9-83*					
488	A7-27	A9-79*					
498	A3-37	A7-11	A8-81*	A9-26			





00A





U14D FF DEFINITIONS CLC1 = CLEAR CONTROL 1 CLC2 = CLEAR CONTROL 2 CR1 = CYCLE REOUEST 1 CLC2 = CLEAR CONTROL 2
CR1 = CYCLE REQUEST 1
CR2 = CYCLE REQUEST 2
IN1 = IN/OUT 1
IN/OUT 2
PH5 = PHASE 5
STC1 = SET CONTROL 1
STC2 = SET CONTROL 2
T2T3 = I/O TIME PERIODS 2 AND 3
T3T4 = I/O TIME PERIODS 3 AND 4
T4T5 = I/O TIME PERIODS 3 AND 5 REGISTER LOAD CONTROL U112C 2 5 6 13 C IN2 FF 16 U102A 1 NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS. SEE I/O CONTROL CARD DIAGRAM FOR DMA INTERRUPT 6. E3 NOT USED ON CARD REV. 1116. table 4-11 for replaceable parts.

DIRECT MEMORY ACCESS (12895-60001, REV. 1116, 1144)

U12E U12D SOURCE DIRECT MEMORY ACCESS (12895-60001, REV. 1116, 1144 ₹R9 200 -2V U61D CARRY
DO U31
CO 4-BIT
BO COUNTER
AO CLK
CLEAR LO LE U71 SE OUAD 2-INPUT MULTIPLEXER CLK UP LOAD U61A 7 6 3 4 U81A V U81D V U81C 5 11 12 1 16 U12A CARRY 12 11 D1 4-BIT CO 2 5 CLK W AO LOAD CLEAR 144 ₹ R11 200 U12B 12 CARRY
13 6 0 U13
12 6 2 0 0 4-BIT
24 2 3 AO CLK
CLEAR LOA
U32F 7 10 U12E 6 11 U12D CARRY 7 11
U43 DO 6 14
4-BIT CO
COUNTER BO
K UP AO
OAD CLEAR

11 114 CLK UP LOAD 5 CLK UP LOAD ₹ R14 200 \$ R15 200 1 16 U14A COUNTER BO 2 5 B1

UP AO 3 2 A

CLEAR 14

LT C LEAR 14

LT C LEAR 14

LT C LEAR 14

LT C LEAR 14

LT C LEAR 14

LT C LEAR 14

LT C LEAR 14

LT C LEAR 14

LT C LEAR 14

LT C LEAR 14

LT C LEAR 14 U17 OU U35
1 4-BIT
COUNTER AL
CLK UP
LOAD U14E CLK UP U27 U14D \$ R8 \$ R6 200 U37 65 FF DEFINITIONS U16A CLC1 = CLEAR CONTROL 1
CLC2 = CLEAR CONTROL 2
CR1 = CYCLE REQUEST 1
CR2 = CYCLE REQUEST 2
IN1 = IN/OUT 1
IN2 = IN/OUT 2
PH5 = PHASE 5
STC1 = SET CONTROL 1
STC2 = SET CONTROL 1
STC3 = I/O TIME PERIODS 2 AND 3
T3T4 = I/O TIME PERIODS 3 AND 4
T4T5 = I/O TIME PERIODS 3 AND 5 SB2 <u>18</u> [398] 2 15 U16B U47 D2 10 7 DO U17
C2 6 2 3 3 3
AA2 CLEAR LOA 7 10 U16E 6 11 CARRY 7 11 U27 0 6 14 LBIT CO COUNTER BO OAD CLEAR 2 11 114 CLK UP U57 -2V U**67** 冊 U77 (REGISTER LOAD CONTROL STC _4 U87 IN/OUT DIRECTION STC SELECT CLC SELECT U112B 6 L IN1 FF U102C SCHEMATIC DIAGRAM FOR R39 AND R40 L CLC1 FF C U85C L STC1 FF C U85D U97 9,10 U84B 3 13 L CLC2 FF C U85B 2 13 L STC2 FF C U85A U112C 2 IN2 FF 16 5 13 C U102A 1 4 U62B U107 U117 NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS. SEE I/O CONTROL CARD DIAGRAM FOR DMA INTERRUPT LOGIC, **♣** U121A ON CARD REV. 1116, U113A PIN 1 IS CONNECTED TO U113A PIN 4 INSTEAD OF U125B PIN 6; U113B PIN 13 IS CONNECTED TO U113A PIN 4 INSTEAD OF U125D PIN 8. U127 50 49 SC6 SC7 [414] [415] R2 CRS [30] 6. E3 NOT USED ON CARD REV. 1116. 100 [226]

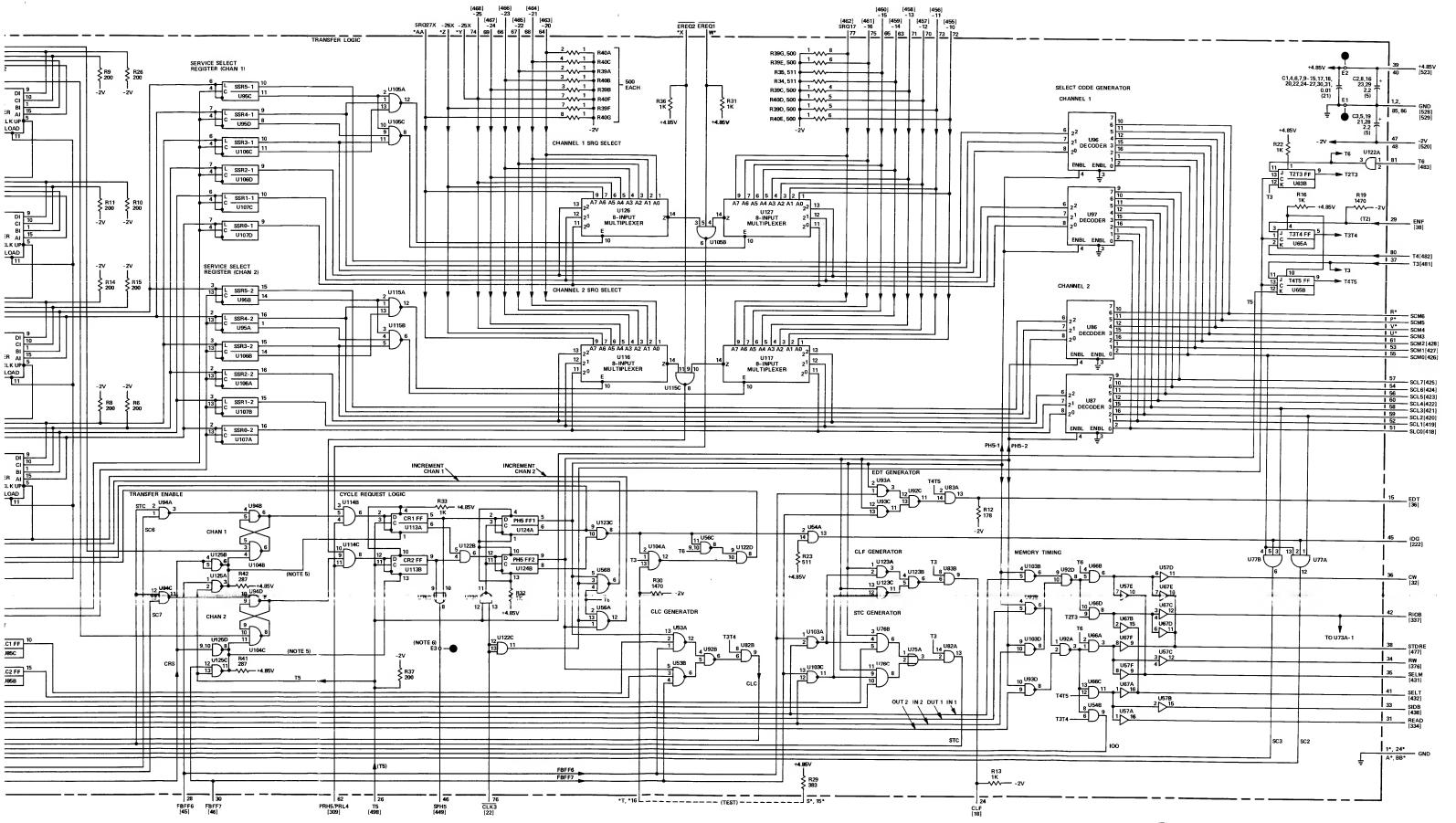


Figure 4-12. A9 Direct Memory Access Card (Accessory)
Parts Location and Schematic Diagrams

Table 4-12. A16 I/O Terminator Card, Replaceable Parts

Reference Designation	HP Part Number	Ωty	Description	Mfr Code	Mfr Part Number
A16 A16R1 THRU A16R15 A16R16	02100-60060 0683-2215 0683-1025	1 32 2	I/O TERMINATOR CARD R:FXD COMP 220 OHM 5% 1/4W R:FXD COMP 1000 OHM 5% 1/4W	2#4.80 0: 121 00121	02100-60060 CB 2215
A16R17 THRU A16R21	0683-2215	-	R:FXD COMP 220 OHM 5% 1/4W	05 121	CB 1025 CB 2215
A16R22 A16R23 THRU A16R34	0683-1025 0683-2215		R:FXD COMP 1000 OHM 5% 1/4W R:FXD COMP 220 OHM 5% 1/4W	0€ 121 0∃ 121	C8 1025 C8 2215

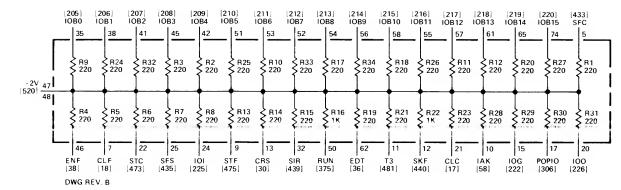
				# TAIF	STOATES S	IGNAL SOURCE
REF.	•	BACKPLANE I	OCATION	* 1NL	JICAIES 3	TONAL SUURCE
NO.		DACKFLANL :				
A 1 Ø	THRU A23					
17	A7-10		A9-44	A10-21 THE	RU A23-21	
18	A4-76	A7-5		A9-24	A10-/ TH	IRU A23-7
30	A7-19*	A9-82	A10-13 THE	40 A23-13		
36 38	A9-15* A1-50	A10-62 TH	KU AZJ-62 AR-57#	49-29	410-46 T	HRU A23-46
49	Δ1-30 Δ7-71	A16-4*	A17-4# 491	* THRÚ A23	-4* 49*	
5ø	A7-34	A16-4* A16-49* A8-84 A24-71	A10-4*,49	THRU A15	-4*,49*	
58	A7-14*	A8-84	A10-10 THE	RU A23-10		
205	A8-13*	A24-71	A10-26,35	THRU A23-2	26 • 35	
206	A8-12#	A24-70 A24-68	A10-29,38	THRU A23-2	29•38 24-41	
207	A8-11*	A24-68	A10-30,41	THRU A23-	30941 45.64	
208 209	A8-16#	A24-72 A24-54	A10-42.77	THRU A23-4	42.77	
210	A8-15*	A24-53	A10-51,80	THRU A23-	51,80	
211	A8-10*	A24-63	A10-53,81	THRU A23-5	53,81	
212	A8-32*	A24-61 A24-32	A10-52,84	THRU A23-9	52,84	
213	A8-31*	A24-32	A10-27,54	THRU A23-	27,54	
214	A8-29*		A10-28,56	THRU A23-	28,56	
215	A8-28*	A24-46	A10-31,58	THRU A23-	31 • 58 55 • 6 <i>0</i>	
216 217	A8-26#	A24-44 A24-14	A10-55,00	THRU A23-	57•78	
218	A8-25#	A24-16	A10-61.79	THRU A23-0	61,79	
219	A8-30*	A24-16 A24-20	A10-65,82	THRU A23-0	65,82	
220	A8-34#	A24-18	A10-74,83	THRU A23-	74,83	
221		THRU_A23-18			410 15 T	THOU 422-15
222	A3-76	A7-43	A8-46#	A9-45*	A10-15 1	THRU A23-15
225	A24-6 A7-53	A8-82*	A24-4	A24-80*	A10-24 T	THRU A23-24
226		A8-78*	A9-32			THRU A23-20
246	A7-82	A13-6*	Δ14-33 *	A21-6*	A22-33#	
247	A7-78		A13-33* A12-33*	A20-6*	A21-33*	
248	A7-8Ø	A11-6*	A12-33#	A19-6*	A20-33*	410 225
249			A10-6*	A11-33* A18-33*	A18-6*	A19-33*
250 251	A7-81 A7-84		A17-6* A17-33*	A10-33*		
255		THRU A23-59	A17-33-			
305	A1-6	A7-8*	A24-67	A104-42	A107-70	
555		THRU A23-66				
306	A7-23*	A24-65	A10-17 TH	RU A23-17		
311	A22-23					
312	A21-23	A22-3# A21-3#				
313 314	A2Ø-23	A21-3*				
315	A18-23	A20-3* A19-3*				
316						
317	A16-23	A17-3*				
318	A14-23	A15-3*				
319		A14-3*				
320	A12-23 A11-23	A13-3* A12-3*				
321 322						
323		A16-3*				
375			RU A23-50			
418		A9-51#	A15-16	A16-34	A23-16	122-26
419		A9-52*	A14-16	A15-34	A22-16 A21-16	A23-34 A22-34
420 421	A7-72* A7-73*	A9-59# A9-58#	A13-16 A12-16	A14-34 A13-34	A20-16	A21-34
422		A9-60*	A11-16	A12-34	A19-16	A20-34
423		A9-56#	A10-16	A11-34	A18-16	A19-34
424		A9-54*	A10-34	A17-16	A18-34	
425	A7-77*	A9-57*	A16-16	A17-34		2 1/ 27
427		A9-53#	A16-14	A17-14+37		
428		A9-61*	A16-37	A10-14,37 A10-5 THR	THRU Al	0-14937
433 435		A7-17 A7-24	A8-52* A8-59*	A10-25 TH		5
435 436		THRU A23-73	AG 37"	712 52 111	760 6 .	-
439			IRU A23-32			
440	A1-17	A4-16#	A7-21*	A10-12# T	HRU A23-	12*
444	_	THRU A23-68				
455		A23-19#				
456	A9-73	A22-19*				

REF.				# IND	CATES	SIGNAL	SOURCE
NO.		BACKPLANE	LOCATION		-		
A10 T	'HRU A23 (CONT)					
457	A9-70	A21-19*					
458	A9-71	A20-19*					
459	A9-63	A19-19*					
460	A9-65	A18-19*					
461	A9-75	A17-19*					
462	A9-77	A16-19*					
463	A9-64	A15-19*					
464	A9-68	A14-19*					
465	A9-67	A13-19*					
466	A9-66	A12-19*					
467	A9-69	A11-19*					
468	A9-74	A10-19*					
473	A7-3	A8-55#	A9-43	A10-22 THRU	J A23-	22	
475	A4-73	A7-6	A8-49*	A10-9 THRU	A23-9		
481	A8-54#	A9-37	A10-11 TH	RU A23-11			
496	A7-50*	A23-8,23	A16-8 THE	RU A22-8			
497	A7-55#	A15-8,23	A10-8 THE	RU A14-8			

5	(加加) 02100 - 60060 A-1131-22			1000		
	R1	R5	R13	R21		
4			R14		R28	
		R6		R22	R29	
		R7			R30	
		R8		R23	R31	
	R2					
	R3	R9	R15			
	R4			R24	R32	
		หาบ	нīв	HZ5		
		R11	R17	R26	R33	
		R12	R18		R34	
			R19			
			R20			
1						
				R27		
12						

DWG REV. B
See table 4-12 for replaceable parts.

I/O TERMINATOR CARD (02100-60060, REV. 1131)



NOTES

- RESISTANCE VALUES ARE IN OHMS UNLESS OTHERWISE SPECIFIED
- 2 ALL PIN NUMBERS REFER TO 86-PIN CONNECTOR UNLESS OTHERWISE INDICATED:
- NUMERALS WITHIN BRACKETS , ARE WIRING LIST REFERENCE NUMBERS

Figure 4-13. A16 I/O Terminator Card, Parts Location and Schematic Diagrams

Table 4-13. A24 Operator Panel Card, Replaceable Parts

HP Part Number	Qty	Description	Mifr	Mfr Part Number
			Gode	
02100-60015 0180-0106 0180-0106 0160-2055 0160-2055	1 22 26	OPERATOR PANEL CARO C:FXO ELECT 60 UF 20% 6VOCW C:FXO ELECT 60 UF 20% 6VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW	28480 29480 29480 55289 56289	02100-60015 0180-0106 0180-0106 C023F101F103ZS22-C0H C023F101F103ZS22-C0H
0160-2055 0160-2055 0180-0106 0160-2055 0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO ELECT 60 UF 20% 6VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW	\$52.89 \$62.89 2.84.80 \$62.89 \$52.89	C023F101F103ZS22-C0H C023F101F103ZS22-C0H 0180-0106 C023F101F103ZS22-C0H C023F101F103ZS22-C0H
0180-0291 0180-0106 0180-0106 0180-0106 0180-0106	2	C:FXO ELECT 1.0 UF 10% 35VOCW C:FXO ELECT 60 UF 20% 6VOCW C:FXO ELECT 60 UF 20% 6VOCW C:FXO ELECT 60 UF 20% 6VOCW C:FXO ELECT 60 UF 20% 6VOCW	50289 23480 23480 23480 23480	1500105X9035A2-DYS 0180-0106 0180-0106 0180-0106 0180-0106
0160-2055 0160-2055 0180-0106 0160-2055 0180-0106		C:FXO CER 0.01 UF +80-20% 100VOCH C:FXO CER 0.01 UF +80-20% 100VOCH C:FXO ELECT 60 UF 20% 6VOCH C:FXO CER 0.01 UF +80-20% 100VOCH C:FXO ELECT 60 UF 20% 6VDCH	56289 56289 28480 56289 28480	C023F101F103ZS22-C0H C023F101F103ZS22-C0H 0180-0106 C023F101F103ZS22-C0H 0180-0106
0180-0106 0180-0291 0180-0106 0180-0106 0180-0106		C:FXO ELECT 60 UF 20% 6V0CW C:FXO ELECT 1.0 UF 10% 35V0CW C:FXO ELECT 60 UF 20% 6V0CW C:FXO ELECT 60 UF 20% 6V0CW C:FXO ELECT 60 UF 20% 6V0CW	24480 54289 24480 24480 24480	0180-0106 1500105X9035A2-0YS 0180-0106 0180-0106 0180-0106
0180-0106 0180-0106 0180-0106 0160-2055 0160-2055		C:FXO ELECT 60 UF 20% 6VDCW C:FXO ELECT 60 UF 20% 6V0CW C:FXO ELECT 60 UF 20% 6V0CW C:FXO CER 0.01 UF +80-20% 100V0CW C:FXO CER 0.01 UF +80-20% 100V0CW	24480 2¥480 2¥480 5€289	0180-0106 0180-0106 0180-0106 C023F101F103ZS22-C0H C023F101F103ZS22-COH
0160-2055 0160-2055 0180-0106 0160-2055 0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VOCW C:FXO ELECT 60 UF 20% 6VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VOCW	5£ 289 5£289 2£480 5£289 5£289	C023F101F103ZS22-C0H C023F101F103ZS22-C0H 0180-0106 C023F101F103ZS22-C0H C023F101F103ZS22-C0H
0180-0106 0160-2055 0160-2055 0160-2055		C:FXO ELECT 60 UF 20% 6VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW	28480 56289 56289 56289	0180-0106 C023F101F103ZS22-COH C023F101F103ZS22-COH C023F101F103ZS22-COH
0160-2055 0160-2055 0160-2055 0180-0106 0160-2055		C:FX0 CER 0.01 UF +80-20% 100VDCW C:FX0 CER 0.01 UF +80-20% 100VOCW C:FX0 CER 0.01 UF +80-20% 100VOCW C:FX0 ELECT 60 UF 20% 6VOCW C:FX0 CER 0.01 UF +80-20% 100VOCW	56289 56289 56289 28480 56289	C023F101F103ZS22-C0H C023F101F103ZS22-C0H C023F101F103ZS22-CDH 0180-0106 C023F101F103ZS22-C0H
0160-2055 0160-2055 0160-2055 0180-0106 0160-2055		C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 ELECT 60 UF 20% 6V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW	5 289 5 289 5 289 2 480 5 489	C023F101F103ZS22-C0H C023F101F103ZS22-C0H C023F101F103ZS22-CDH 0180-0106 C023F101F103ZS22-C0H
0180-0106 0180-0106 1901-0040 2140-0364	1 38	C:FXO ELECT 60 UF 20% 6V0CW C:FXD ELECT 60 UF 20% 6V0CW DIOOE:SILICON 30MA 30WV LAMP:INCANDESCENT	28480 28480 07263 28480	0180-0106 0180-0106 F0G1088 2140-0364
1854-0477 1854-0477 1854-0477 1854-0477 1810-0030	10	TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN NETWORK:7 RESISTORS 1K OHM 5% 0.15W EA	80131 80131 80131 80431 20+80	2N2222A 2N2222A 2N2222A 2N2222A 1810-0030
1810-0030 0698-7260 0698-7236 0698-7244 1810-0030	1 5 2	NETWORK:7 RESISTORS 1K OHM 5% 0.15W EA R:FXD FLM 1OK OHM 2% 1/6W R:FXO FLM 1K OHM 2% 1/6W R:FXO FLM 2.15K OHM 2% 1/6W NETWORK:7 RESISTORS 1K OHM 5% 0.15W EA	28-180 28-180 28-180 28-180 28-180	1810-0030 0698-7260 0698-7236 0698-7244 1810-0030
1810-0030 0757-0416 0757-0280 0757-0442 0757-0443 0698-7244 0698-7236 0698-7236	3 2 1 1	NETWORK:7 RESISTORS 1K OHM 5% 0.15W EA R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 10.0K OHM 1% 1/8W R:FXD MET FLM 10.0K OHM 1% 1/8W R:FXD MET FLM 82.5K OHM 1% 1/8W R:FXD FLM 2.15K OHM 2% 1/8W R:FXO FLM 1K OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO FLM 1K OHM 2% 1/8W	284.80 284.80 284.80 284.80 284.80 284.80 284.80 284.80 284.80	1810-0030 0757-0416 0757-0280 0757-0442 0757-0463 0598-7244 0698-7236 0698-7229
	02100-60015 0180-0106 0180-0106 0160-2055 0160-2055 0160-2055 0180-0106 0160-2055	02100-60015	02100-60015 0180-0108 022	C2100-00015

Table 4-13. A24 Operator Panel Card, Replaceable Parts (Continued)

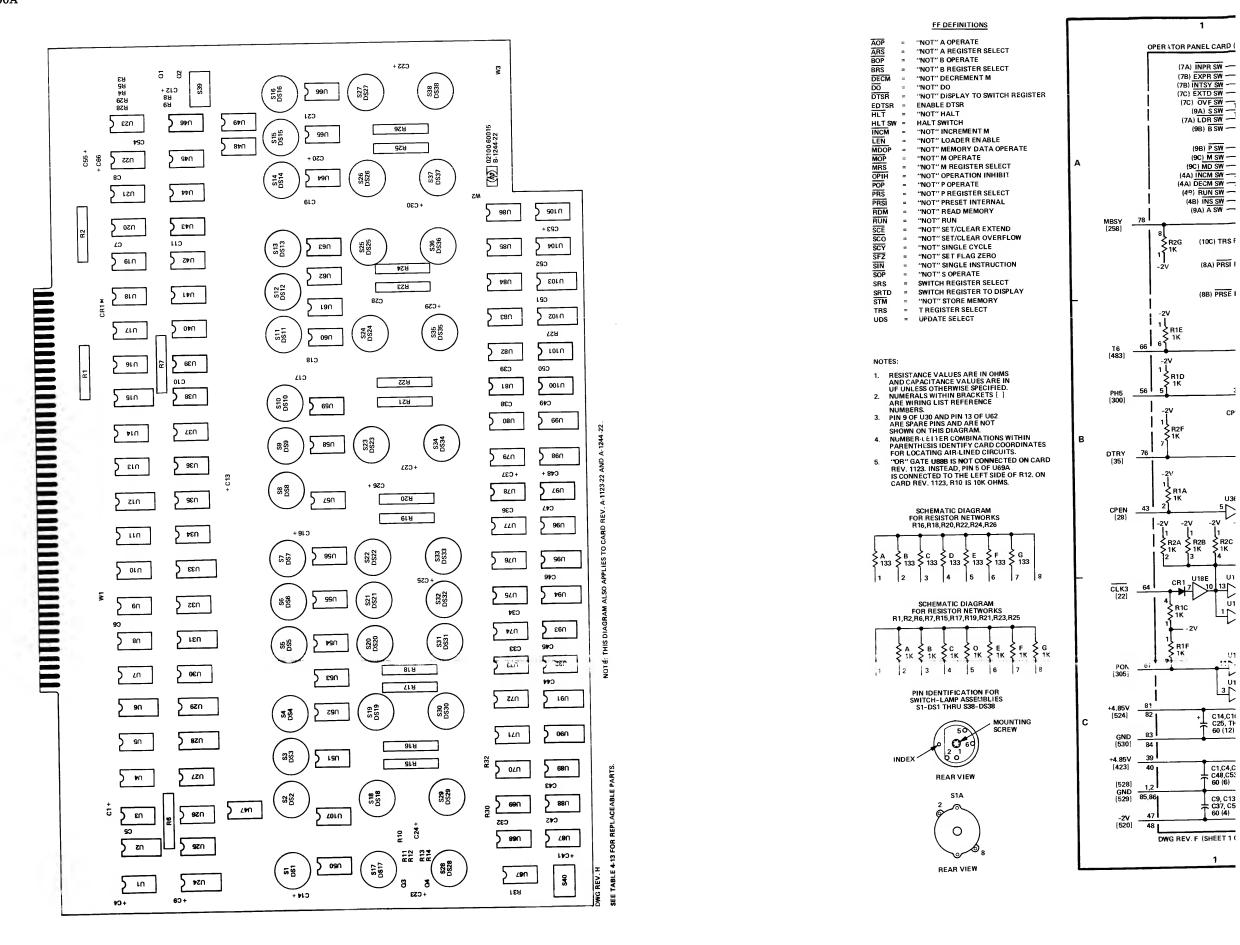
Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A24R17 A24R18 A24R19 A24R20 A24R20	1810-0030 1810-0063 1810-0030 1810-0063		NETWORK:7 RESISTORS 1K OHM 5% 0.15W EA RESISTIVE NETWORK:7 X 133 OHM 5% 2W EA NETWORK:7 RESISTORS 1K OHM 5% 0.15W EA RESISTIVE NETWORK:7 X 133 OHM 5% 2W EA NETWORK:7 RESISTORS 1K OHM 5% 0.15W EA	28480 28480 28480 28480 28480	1810-0030 1810-0063 1810-0030 1810-0063 1810-0030
A24R22 A24R23 A24R24 A24R25 A24R25	1810-0063 1810-0030 1810-0063 1810-0030 1810-0063		RESISTIVE NETWORK:7 X 133 OHM 5% 2W EA NETWORK:7 RESISTORS 1K OHM 5% 0.15W EA RESISTIVE NETWORK:7 X 133 OHM 5% 2W EA NETWORK:7 RESISTORS 1K OHM 5% 0.15W EA RESISTIVE NETWORK:7 X 133 DHM 5% 2W EA	28480 28480 28480 28480 28480	1810-0063 1810-0030 1810-0063 1810-0030 1810-0063
A24R27 A24R28 A24R29 A24R30 A24R31	0757-0416 0698-7236 0698-7229 0698-3441 0757-0416	1	R:FXD MET FLM 511 OHM 1% 1/8W R:FXO FLM 1K OHM 2% 1/8W R:FXO FLM 511 OHM 2% 1/8W R:FXO MET FLM 215 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0416 0698-7236 0698-7229 0698-3441 0757-0416
A24R32 A24R33 A24S1 THRU	0757-0280 0698-7236 3101-1531	38	R:FXD MET FLM 1K CHM 1% 1/8W R:FXD FLM 1K OHM 2% 1/8W SWITCH:REED	28480 28480 28480	0757-0280 0698-7236 3101-1531
A24S38 A24S39	3101-0973	2	SWITCH: SLIGE DPDT 0.5A 125V AC/DC	79727	G126-0018
A24S40 A24U1 A24U2 A24U3 A24U4	3101-0973 1820-0141 1820-0485 1820-0371 1820-0371	17 4 4	SWITCH:SLIDE OPOT 0.5A 125V AC/DC IC:TTL QUAD 2-INPT AND GATE IC:CTL HEX LEVEL RESTORER IC:TTL HS TRIPLE 3-INPT NAND GATE IC:TTL HS TRIPLE 3-INPT NAND GATE	79727 04713 07263 01295 01295	G126-10018 MC3001P U6B981649X SN74H10N SN74H10N
A24U5 A24U6 A24U7 A24U8 A24U8	1820-0141 1820-0301 1820-0377 1820-0385 1820-0205	10 1 1 13	IC:TTL QUAO 2-INPT AND GATE IC:TTL QUAO 8I-STA8LE D-LATCH IC:TTL HS DUAL 2-WIDE 2-INPT IC:TTL HS 4 W-3-2-2-3 INPT ANO/DR EXP. IC:TTL QUAO 2-INPT DR GATE	04713 01295 01295 01295 28480	MC3001P SN7475N SN74H50N SN74H62N 1820-0205
A24U10 A24U11 A24U12 A24U13 A24U14	1820-0370 1820-0141 1820-0485 1820-0370 1820-0141	6	IC:TTL HS QUAO 2-INPT NAND GATE IC:TTL QUAO 2-INPT ANO GATE IC:CTL HEX LEVEL RESTORER IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL QUAO 2-INPT ANO GATE	01295 04713 07263 01295 04713	SN74HOON MC3001P U68981649X SN74HOON MC3001P
A24U15 A24U16 A24U17 A24U18 A24U19(NOTE 1)	1820-0485 1820-0186 1820-0668 1820-0485 1820-0451	10 2 6	IC:CTL HEX LEVEL RESTORER IC:CTL OUAL 2-INPT ANO GATE IC:TTL HEX BUFFER/ORIVER W/OPEN COLL. IC:CTL HEX LEVEL RESTORER IC:TTL OUAL J-K F/F	07263 07263 01295 07263 04713	U6B981649X U6A985649X SN7407N U6B981649X MC3062P
A24U20(NOTE 1) A24U21(NOTE 1) A24U22(NOTE 1) A24U23 A24U24	1820-0451 1820-0451 1820-0451 1820-0512 1820-0301	1	IC:TTL OUAL J-K F/F IC:TTL OUAL J-K F/F IC:TTL OUAL J-K F/F IC:TTL OUAL D F/F IC:TTL QUAO BI-STABLE D-LATCH	04713 04713 04713 01295 01295	MC3062P MC3062P MC3062P SN74H74N SN7475N
A24U25 A24U26 A24U27 A24U28 A24U29	1820-0375 1820-0370 1820-0370 1820-0301 1820-0301	5	IC:TTL HS 8-INPT NANO GATE IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL QUAO 8I-STABLE 0-LATCH IC:TTL QUAO 8I-STABLE 0-LATCH	01295 01295 01295 01295 01295	SN74H30N SN74H00N SN74H00N SN7475N SN7475N
A24U30 A24U31 A24U32 A24U33 A24U34	1820-0375 1820-0301 1820-0375 1820-0301 1820-0205		IC:TTL HS 8-INPT NANO GATE IC:TTL QUAO 8I-STABLE O-LATCH IC:TTL HS 8-INPT NAND GATE IC:TTL QUAD 8I-STABLE O-LATCH IC:TTL QUAO 2-INPT OR GATE	01295 01295 01295 01295 28480	SN74H30N SN7475N SN74H30N SN7475N 1820-0205
A24U35 A24U36 A24U37 A24U38 A24U39	1820-0424 1820-0424 1820-0205 1820-0371 1820-0372	2	IC:TTL HS HEX INVERTER IC:TTL HS HEX INVERTER IC:TTL QUAD 2-INPT OR GATE IC:TTL HS TRIPLE 3-INPT NAND GATE IC:TTL TRIPLE 3-INPT AND GATE	04713 04713 28480 01295 28480	SN74H04N SN74H04N 1820-0205 SN74H10N 1820-0372
A24U40 A24U41 A24U42 A24U43 A24U44	1820-0370 1820-0372 1820-0370 1820-0371 1820-0141		IC:TTL HS QUAO 2-INPT NANO GATE IC:TTL TRIPLE 3-INPT AND GATE IC:TTL HS QUAO 2-INPT NAND GATE IC:TTL HS TRIPLE 3-INPT NAND GATE IC:TTL QUAO 2-INPT AND GATE	01295 28480 01295 01295 04713	SN74H00N 1820-0372 SN74H00N SN74H10N MC3001P
A24U45 A24U46 A24U47 A24U48 A24U48	1820-0141 1820-0424 1820-0141 1820-0141 1820-0205		IC:TTL QUAO 2-INPT ANO GATE IC:TTL HS HEX INVERTER IC:TTL QUAD 2-INPT AND GATE IC:TTL QUAO 2-INPT ANO GATE IC:TTL QUAO 2-INPT OR GATE	04713 04713 04713 04713 28480	MC3001P SN74H04N MC3001P MC3001P 1820-0205
A24U50 A24U51 A24U52 A24U53 A24U54	1820-0769 1820-0769 1820-0769 1820-0617 1820-0769	11	IC:TTL OIGITAL IC:TTL DIGITAL IC:TTL DIGITAL IC:TTL QUAD 2-INPT EXCL. NDR GATE IC:TTL DIGITAL	28480 28480 28480 04713 28480	1820-0769 1820-0769 1820-0769 MC3022P 1820-0769

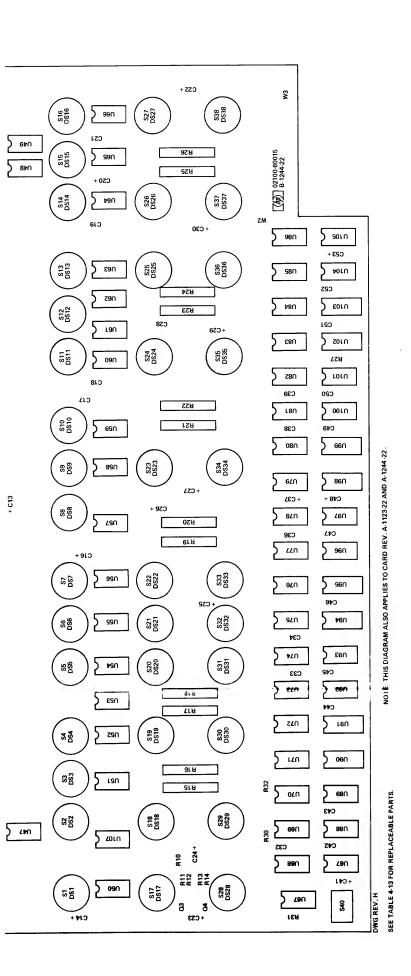
Table 4-13. A24 Operator Panel Card, Replaceable Parts (Continued)

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A24U55 A24U56 A24U57 A24U58 A24U58 A24U59	1820-1018 1820-0769 1820-0617 1820-0617		IC:TTL HS 8-INPT NAND GATE IC:TTL DIGITAL IC:TTL QUAD 2-INPT EXCL. NDR GATE IC:TTL DIGITAL IC:TTL QUAD 2-INPT EXCL. NDR GATE	01295 23480 0+713 23480 0+713	5N74H30H 1820-0769 MC3022P 1820-0769 MC3022P
A24U60 A24U61 A24U62 A24U63 A24U64	1820-0769 1820-0617 1820-0375 1820-0769 1820-0769		IC:TTL DIGITAL IC:TTL QUAD 2-INPT EXCL. NDR GATE IC:TTL HS 8-INPT NAND GATE IC:TTL DIGITAL IC:TTL DIGITAL	28480 04713 02295 28480 28480	182D-0769 MC3022P SN74H30N 1820-0769 1820-0769
A24U65 A24U66 A24U67 A24U68 A24U69(NOTE 1)	1820-0769 1820-0769 1820-0140 1820-0186 1820-0451	1	IC:TTL DIGITAL IC:TTL DIGITAL IC:TTL DUAL 4-INPT AND BUFFER IC:CTL DUAL 2-INPT AND GATE IC:TTL DUAL J-K F/F	28480 28480 04713 07263 04713	182D-0769 1820-0769 MC3026P U6A985649X MC3D62P
A24U70 A24U71 A24U72 A24U73 A24U74	1820-0141 1820-0205 1820-0186 1820-0186 1820-0141		IC:TTL QUAD 2-INPT AND GATE IC:TTL QUAD 2-INPT DR GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL QUAD 2-INPT AND GATE	0%713 28480 07263 07263 0%713	MC3001P 1820-D205 U6A985649X U6A985649X MC3001P
A24U75 A24U76 A24U77 A24U78 A24U79	1820-0205 1820-0186 1820-0186 1820-0141 1820-0205		IC:TTL QUAD 2-INPT DR GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL QUAD 2-INPT AND GATE IC:TTL QUAD 2-INPT OR GATE	2E480 07263 07263 07713 2B480	1820-D205 U6A985649X U6A985649X MC3001P 1820-D205
A24U80 A24U81 A24U82 A24U83 A24U84	1820-0186 1820-0186 1820-0141 1820-0205 1820-0186		IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL QUAD 2-INPT AND GATE IC:TTL QUAD 2-INPT DR GATE IC:CTL DUAL 2-INPT AND GATE	07263 07263 04713 28480 07263	U6A985649X U6A985649X MC30D1P 1820-D205 U6A985649X
A24U85 A24U86 A24U87 A24U88 A24U89	1820-0186 1820-0141 1820-0424 1820-0205 1820-0668		IC:CTL DUAL 2-INPT AND GATE IC:TTL QUAD 2-INPT AND GATE IC:TTL HS HEX INVERTER IC:TTL QUAD 2-INPT OR GATE IC:TTL HEX BUFFER/DRIVER W/DPEN COLL.	07263 08713 08713 28480 01295	U6A985649X MC30D1P SN74HD4N 1820-0205 SN74O7N
A24U90 A24U91 A24U92 A24U93 A24U94	1820-0437 1820-0301 1820-0141 1820-0205 1820-0437	4	IC:TTL QUAD D F/F IC:TTL QUAD BI-STABLE D-LATCH IC:TTL QUAD 2-INPT AND GATE IC:TTL QUAD 2-INPT OR GATE IC:TTL QUAD D F/F	04713 01295 04713 2848D 04713	MC4015P SN7475N MC3001P 1820-0205 MC4015P
A24U95 A24U96 A24U97 A24U98 A24U99	1820-0301 1820-0141 1820-0205 1820-0437 1820-0301		IC:TTL QUAD 8I-STA8LE D-LATCH IC:TTL QUAD 2-INPT AND GATE IC:TTL QUAD 2-INPT OR GATE IC:TTL QUAD D F/F IC:TTL QUAD BI-STABLE D-LATCH	01295 04713 24480 04713 01295	SN7475N MC3001P 1820-D205 MC4015P SN7475N
A24U100 A24U101 A24U102 A24U103 A24U104	18 20-0141 1820-020 5 18 20-043 7 18 20-030 1 18 20-0141		IC:TTL QUAD 2-INPT AND GATE IC:TTL QUAD 2-INPT DR GATE IC:TTL QUAD D F/F IC:TTL QUAD BI-STABLE D-LATCH IC:TTL QUAD 2-INPT AND GATE	04713 24480 04713 01295 04713	MC3001P 1820-0205 MC4015P SN7475N MC3001P
A24U105 A24U107(NOTE 1) A24W1 A24W2 A24W3	1820-0205 1820-0451 8159-0005 8159-0005 8159-0005	3	IC:TTL QUAD 2-INPT OR GATE IC:TTL DUAL J-K F/F JUMPER WIRE JUMPER WIRE JUMPER WIRE	28480 04713 28480 28480 28480	1820-0205 MC3062P 8159-0005 8159-0005 8159-0005

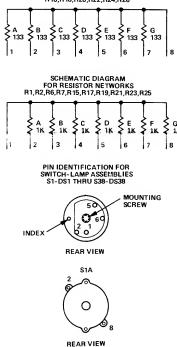
REF.				# IN	DICATES SI	GNAL SOURCE	
NO.		BACKPLANE	LOCATION				
A24							
22	A1-78#	A3-81	A7-56	A8-42	A9-76	A24-64	
	A107-69						
28	A1-52*	A4-19	A24-43				
32	A6-73*		A24-55*	A107-76			
33	A1-42	A24-60*					
35	A3-25	A24-76	A107-81*				
43	A7-42*						
44	A4-10		A24-22				
47	A1-67		A24-21#				
56	A1-65	A7-65*		A24-74			
198	A7-35*		A24-24				
200	A1-37	A24-33*				102 04	
225	A7-53	A8-82*		A24-80*	A10-24 TH	1RU A23-24	
258	A3-29	A24-78	A107-77*				
292	A4-68*		A24-51				
300	A3-41*	A7-13	A24-56				
301	A24-79	S1A-8*					
302	A3-60	A4-28	A24-38*				
303	A3-72	A4-26	A24-41#				
304	A3-32	A24-36*			4107-70		
305	A1-6	A7-8#	A24-67	A104-42	A107-10		
		THRU A23-66		400 17			
306	A7-23*		A10-17 1H	RU A23-17			
324	A7-22	A24-7*					
325	A1-4	A24-13*		10-215	A24-778	A107-72	
334	A1-54*				A24-77#	ALUI-IZ	
368	A3-24*		A5-35,36				
376	A6-74*		A24-57#	A10/-12			
416	A1-66	A24-11*					
417	A1-68	A24-5*					
429	A1-79	A24-3*	10.40	25#	404 - 408	A107-66	
431	A1-53#	A3-22*			A24-42#	A101-00	
438	A3-46*		A9-33*	A24-75*			
453	A1-74	A24-62*					
469	A1-62	A24-58#					
470	A1-64	A24-59*	124-72	A107-73			
477	A3-53*			A107-73	124-66		
483	A3-26	A7-58	A8-43*	A9-81	A24-66		
495	A24-9*						
499	A4-03	A24-35*					

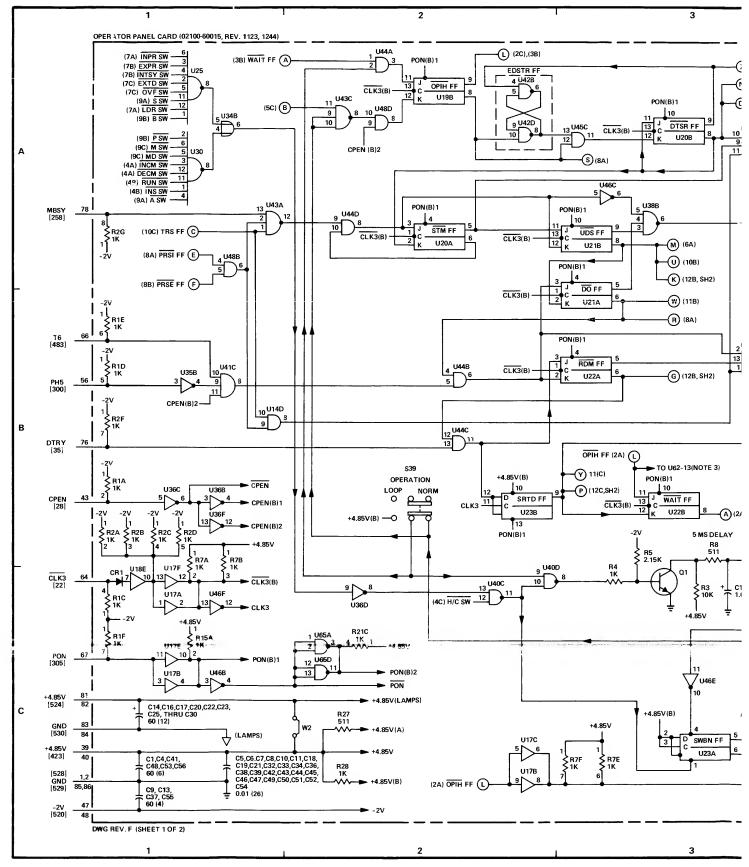
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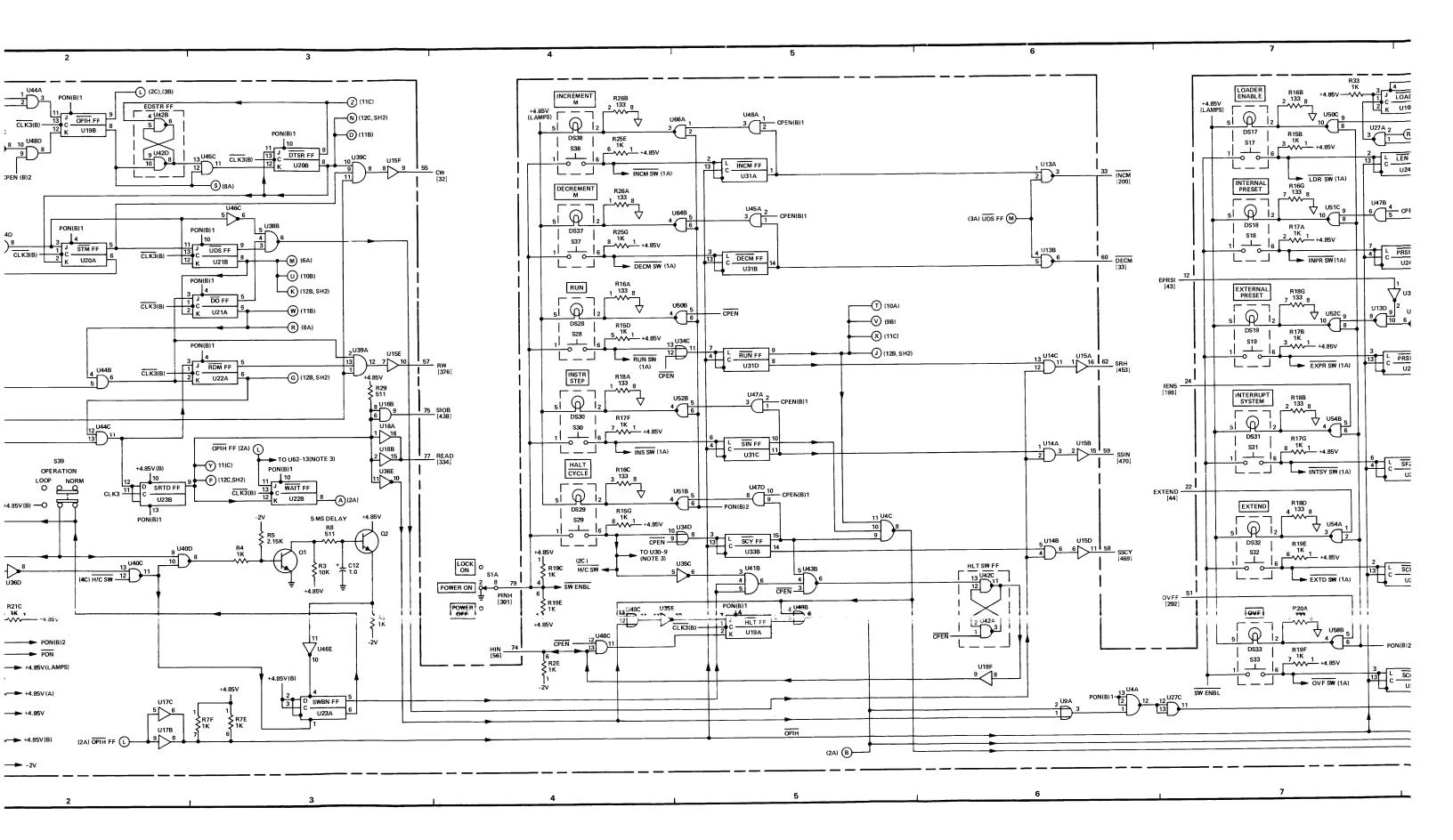




FF DEFINITIONS "NOT" A OPERATE
"NOT" A REGISTER SELECT ARS BOP BRS DECM DO DTSR "NOT" B OPERATE "NOT" B REGISTER SELECT "NOT" DECREMENT M "NOT" DO "NOT" DISPLAY TO SWITCH REGISTER EDTSR HLT ENABLE DTSR HLT SW
INCM
LEN
MDOP
MOP
MOP
MRS
OPIH
POP
PRS
PRSI
RDM
RUN
SCE
SCO
SCY
SFZ HALT SWITCH "NOT" INCREMENT M "NOT" LOADER EN ABLE "NOT" MEMORY DATA OPERATE "NOT" M OPERATE "NOT" OPERATION INHIBIT "NOT" P OPERATE "NOT" P REGISTER SELECT "NOT" PRESET INTERNAL "NOT" READ MEMORY "NOT" RUN "NOT" SET/CLEAR EXTEND "NOT" SET/CLEAR OVERFLOW "NOT" SINGLE CYCLE "NOT" SET FLAG ZERO "NOT" SINGLE INSTRUCTION "NOT" S OPERATE SWITCH REGISTER SELECT SWITCH REGISTER TO DISPLAY "NOT" STORE MEMORY T REGISTER SELECT UPDATE SELECT TRS UDS NOTES: 1. RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.
2. NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.
3. PIN 9 OF U30 AND PIN 13 OF U62 ARE SPARE PINS AND ARE NOT SHOWN ON THIS DIAGRAM.
4. NUMBER-LE ITER COMBINATIONS WITHIN PARENTHESIS IDENTIFY CARD COORDINATES FOR LOCATING AIR-LINED CIRCUITS.
5. "OR" GATE HIRSE IS MOT CONNECTED ON CARD. "OR" GATE U888 IS NOT CONNECTED ON CARD REV. 1123. INSTEAD, PIN 5 OF U69A IS CONNECTED TO THE LEFT SIDE OF R12. ON CARD REV. 1123, R10 IS 10K OHMS. SCHEMATIC DIAGRAM FOR RESISTOR NETWORKS R16,R18,R20,R22,R24,R26







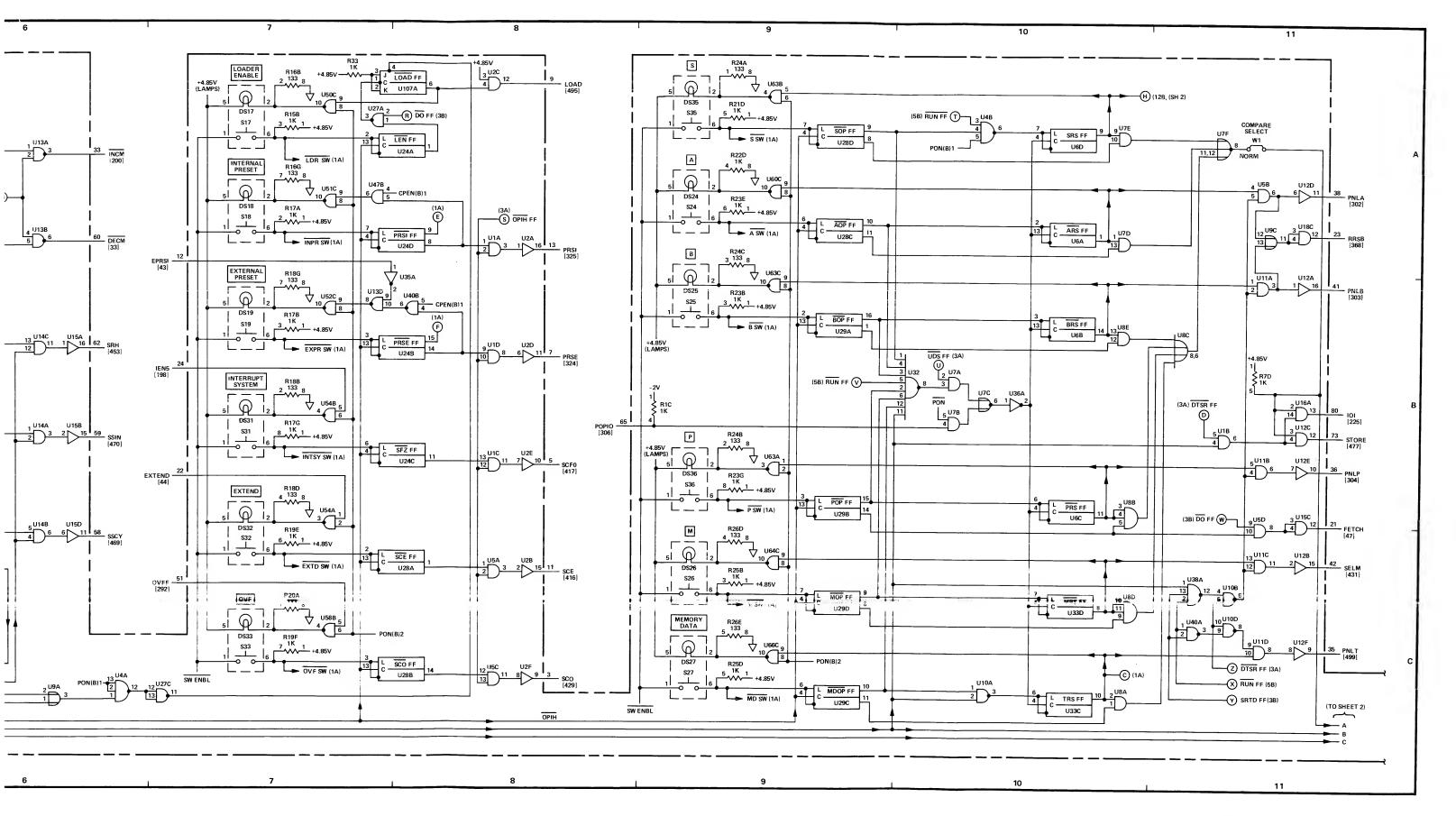
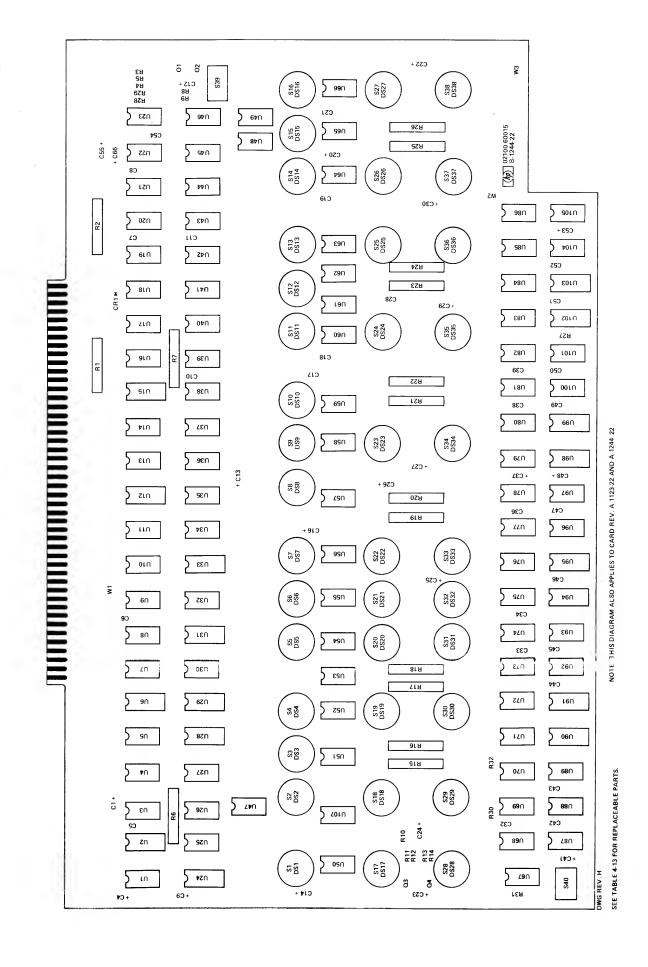


Figure 4-14. A24 Operator Panel Card, Parts Location and Schematic Diagrams (Sheet 1 of 2)

2100A Section IV

(Information continues on next page)

REF.					# 3	IND	ICATES	SIGN	AL :	SOURCE	
NO.		BACKPLANE	LOCATION								
A24											
205	A8-13*	A24-71	A10-26,35	THRII	A2.	1-2	6.35				
206	A8-12*	A24-70	A10-29.38								
207	A8-11#	A24-68	A10-30,41								
208	A8-17*	A24-72	A10-45.64								
			A10-43,04 A10-42,77								
209	A8-16*	A24-54	A10-42,77								
210	A8-15#	A24-53			_						
211	A8-10*	A24-63	A10-53,81			_					
212	A8-32*	A24-61	A10-52,84								
213	A8-31*	A24-32	A10-27,54								
214	A8-29#	A24-34	A10-28,56								
215	A8-28*	A24-46	A10-31,58								
216	A8-27*	A24-44	A10-55,60								
217	A8-26*	A24-14	A10-57,78	THRU	A23	3-5	7•78				
218	A8-25*	A24-16	A10-61,79	THRU	A23	3-6	1,79				
219	A8-30*	A24-20	A10-65,82	THRU	A23	3-6	5,82				
220	A8-34*	A24-18	A10-74,83	THRU	A23	3-7	4,83				
222	A3-76	A7-43	A8-46*	A9-45	5#		A10-15	THRU	A2	3-15	
	A24-6										
225	A7-53	A8-82*	A24-4	A24-8	30#		A10-24	THRU	A2	3-24	
226	A3-77	A8-78*	A9-32	A24-			A10-20				
294	A8-69*	A24-52									
296	A1-41*	A8-53	A24-49								
297	A1-30*	A7-12	A8-71	A24-9	50						
298	A1-28*	A24-28	AO 11	ALT .							
299	A1-26*	A24-30									
		A7-49*	A8-74	A24-8	a						
412	A4-71	A / -49*	A0-14	AC4-0	_						



FF DEFINITION

DR 0 THRU DR 15 = DISPLAY REGISTER BIT 0 THRU
DISPLAY REGISTER BIT 15
ENBL A = "NOT" ENABLE A
ENBL B = ENABLE B
SR 0 THRU SR 15 = SWITCH REGISTER BIT 0 THRU
ACCISTER BIT 15

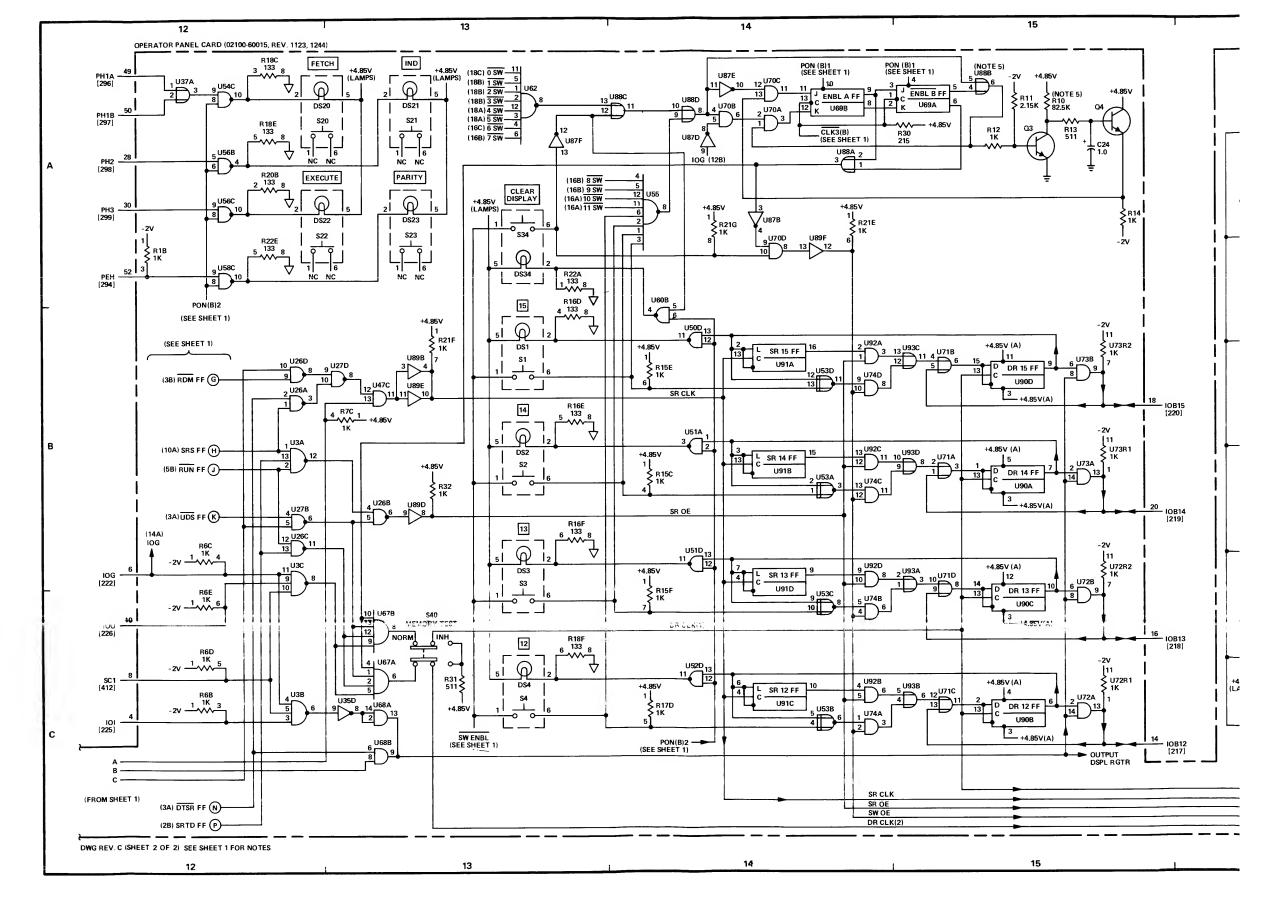
FF DEFINITION

DR 0 THRU DR 15 = DISPLAY REGISTER BIT 0 THRU
DISPLAY REGISTER BIT 15

ENBL A = "NOT" ENABLE A

ENBL B = ENABLE B

SR 0 THRU SR 15 = SWITCH REGISTER BIT 0 THRU
REGISTER BIT 15



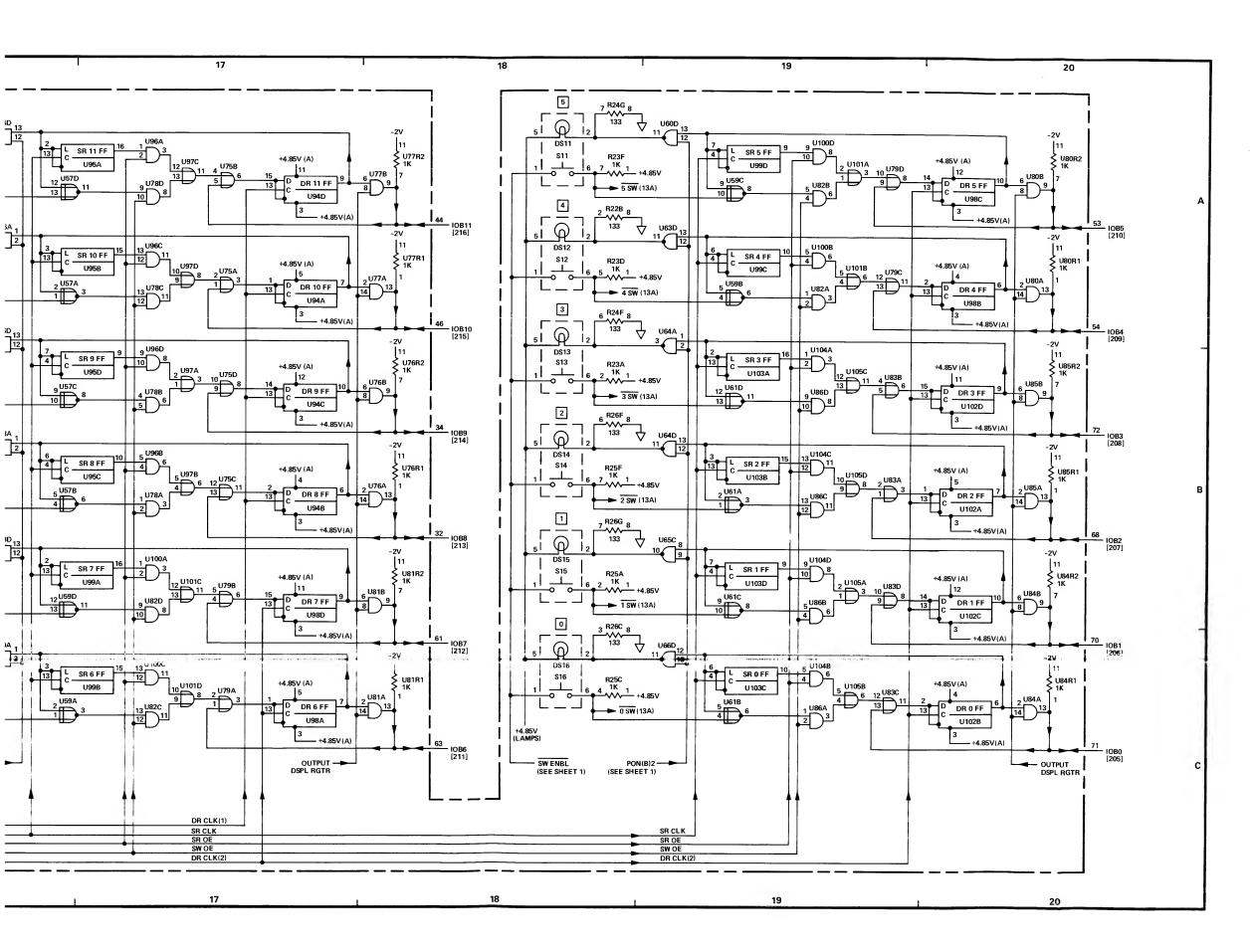


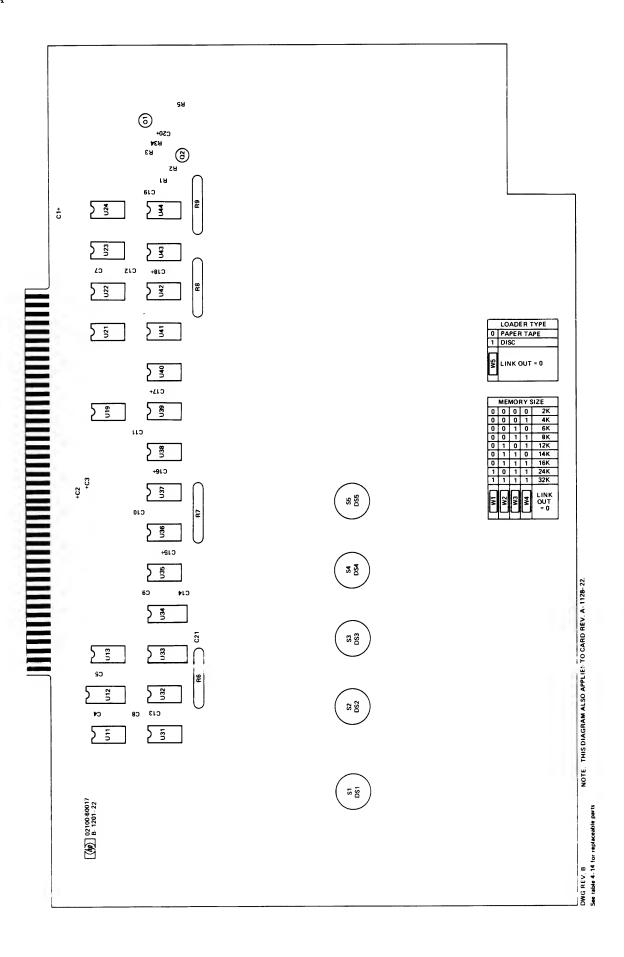
Figure 4-14. A24 Operator Panel Card, Parts Location and Schematic Diagrams (Sheet 2 of 2)

Table 4-14. A24 Controller Panel Card (Option 001), Replaceable Parts

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A24 A24C1 A24C2 A24C3 A24C4	C2100-60017 C180-0106 O180-0106 O180-0106 O160-2055	1 7 13	CONTROLLER PANEL CARD C:FXD ELECT 60 UF 20% 6VDCW C:FXD ELECT 6D UF 20% 6VDCW C:FXD ELECT 6D UF 20% 6VDCW C:FXD CER D.D1 UF +80-20% 100VDCW	ZH4 80 ZH4 8D ZH4 8D ZH4 80 ZH2 89	02100-60017 0180-0106 D18D-D106 018D-D1D6 C023F1D1F103ZS22-CDH
A24C5 A24C6 A24C7 A24C8 A24C9	0160-2055 D160-2055 D160-2D55 D160-2055 D160-2055		C:FXD CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +8D-20% 10DVDCW C:FXD CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +80-20% 100VDCW C:FXD CER 0.01 UF +80-20% 100VDCW	56289 56289 56289 56289 56289	C023F101F103ZS22=C0H CD23F1D1F103ZS22=C0H CD23F1D1F103ZS22=C0H CD23F1D1F103ZS22=C0H CD23F101F103ZS22=C0H
A24C10 A24C11 A24C12 A24C13 A24C14	016D-2055 016D-2055 0160-2055 0160-2055 016D-2055		C:FXD CER D.D1 UF +8D-20% 100VDCW C:FXD CER 0.D1.UF +80-20% 100VDCW C:FXD CER 0.D1 UF +80-20% 100VDCW C:FXD CER 0.D1 UF +80-20% 100VDCW C:FXD CER D.D1 UF +80-20% 100VDCW	562 89 562 89 562 89 562 89 562 89	C023F1D1F103ZS22-CDH CD23F1D1F103ZS22-CDH C023F1D1F103ZS22-CDH CD23F101F103ZS22-CDH CD23F101F103ZS22-CDH
A24C15 A24C16 A24C17 A24C18 A24C19	018D-D106 0180-0106 018D-01D6 0180-0106 0160-2055		C:FXD ELECT 60 UF 20% 6VDCW C:FXD ELECT 60 UF 20% 6VDCW C:FXD ELECT 6D UF 20% 6VDCW C:FXD ELECT 60 UF 20% 6VDCW C:FXD CER 0.D1 UF +8D-20% 100VDCW	型H480 型H48D 型H480 型H480 型H289	D180-01D6 0180-0106 0180-0106 D180-0106 C023F101F103ZS22-CDH
A24C2D A24C21 A24DS1 A24DS2 A24DS3	0180-0197 D160-2055 2140-0364 2140-0364 2140-0364	1 5	C:FXD ELECT 2.2 UF 10% 2DVDCW C:FXD CER D.D1 UF +80-20% 100VDCW LAMP:INCANDESCENT LAMP:INCANDESCENT LAMP:INCANDESCENT	52:2 89 52:2 89 22:4 8D 22:4 80 23:4 80	150D225X9020A2-DYS C023F101F103ZS22-CDH 214D-D364 214D-D364 214D-0364
A24DS4 A24DS5 A24Q1 A24Q2 A24R1	214D-D364 2140-D364 1854-0477 1854-0477 D757-0280	2	LAMP:INCANDESCENT LAMP:INCANDESCENT TSTR:SI NPN TSTR:SI NPN R:FXD MET FLM 1K OHM 1% 1/8W	2848D 2848D 880131 880131 28480	2140-D364 2140-0364 2N2222A 2N2222A 0757-D280
A24R2 A24R3 A24R4 A24R5 A24R6	0698-DD84 0757-0442 D757-0416 0757-0280 1810-0030	1 1 1	R:FXD MET FLM 2.15K OHM 1% 1/8W R:FXD MET FLM 10.0K OHM 1% 1/8W R:FXD MET FLM 511 OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W NETWORK:7 RESISTORS 1K OHM 5% D.15W EA	2914 80 2814 80 2914 80 2814 80 2814 80	0698-D084 D757-D442 0757-0416 D757-D28D 1810-D03D
A24R7 A24R8 A24R9 A24S1 A24S2	1810-0D3D 1810-D030 1810-D063 3101-1531 3101-1531	1 5	NETWORK:7 RESISTORS 1K OHM 5% 0.15W EA NETWORK:7 RESISTORS 1K OHM 5% 0.15W EA RESISTIVE NETWORK:7 X 133 OHM 5% 2W EA SWITCH:REED SWITCH:REED	之前480 之前480 之前480 之前480 之前48D 之前48D	1810-0030 1810-0D3D 1810-0D63 3101-1531 3101-1531
A24S3 A24S4 A24S5 A24U11 A24U12	3101-1531 3101-1531 3101-1531 1820-0068 1820-0301	1 1	SWITCH:REED SWITCH:REED SWITCH:REED IC:TIT TRIPLE 3-INPUT POS NAND GATE IC:TTL QUAD 81-STABLE D-LATCH	25:4 8D 25:4 8D 25:4 80 12:0 4D 00:2 95	3101-1531 3101-1531 3101-1531 SN7410N SN7475N
A24U13 A24U19 A24U21 A24U22 A24U23	1820-0069 1820-0451 1820-0424 1820-0370 1820-0370	1 2 1 3	IC:TTL DUAL 4-INPT POS NAND GATE IC:TTL DUAL J-K F/F IC:TTL HS HEX INVERTER IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL HS QUAD 2-INPT NAND GATE	00:295 04:713 04:713 00:295 00:295	SN742DN MC3062P SN74H04N SN74H00N SN74H00N
A24U24 A24U31 A24U32 A24U33 A24U34	1820-0256 1820-0141 1820-0370 1820-0485 1820-0485	2 2 2	IC:DTL QUAD 2-INPUT POWER GATE IC:TTL QUAD 2-INPT AND GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:CTL HEX LEVEL RESTORER IC:CTL HEX LEVEL RESTORER	0 713 0 713 0 295 0 7263 0 7263	MC858P MC3001P SN74HODN U68981649X U68981649X
A24U35 A24U36 A24U37 A24U38 A24U39	1820-0186 1820-0186 1820-0186 1820-0186 1820-0186	7	IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE	07/263 07/263 07/263 07/263 07/263	U6A985649X U6A985649X U6A985649X U6A985649X U6A985649X
A24U4D A24U41 A24U42 A24U43 A24U44	1820-0186 1820-0186 1820-0451 1820-0141 1820-0256		IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2-INPT AND GATE IC:TTL DUAL J-K F/F IC:TTL QUAD 2-INPT AND GATE IC:DTL QUAD 2-INPUT POWER GATE	07263 07263 04713 04713 04713	U6A985649X U6A985649X MC3062P MC3001P MC858P
A24W1 A24W2 A24W3 A24W4 A24W5	8159-D005 8159-D0D5 8159-D005 8159-D005 8159-D005	5	JUMPER WIRE JUMPER WIRE JUMPER WIRE JUMPER WIRE JUMPER WIRE	2E-48D 2E-48D 2E-48D 2E-480 2E-480	8159-0005 8159-0005 8159-0005 8159-0005 8159-0005

Section IV 2100A

REF.				;	IND	ICATES	SIGNAL	SOURCE	
NO.		BACKPLANE	LOCATION						
A24									
22	A1-78* A107-69	A3-81	A7-56	A8-42		A9-76	A24	-64	
28		A4-19	A24-43						
43	A7-42%	A24-12							
56	A1-65	A7-65*	A8-50×	A24-7	ŧ				
209	A8-16*	A24-54	A10-42,77	THRU A	123-4	2,77			
210	A8-15*		A10-51,80	THRU A	23-5	1,80			
	A8-10%		A10-53,81	THRU A	123-5	3,81			
212	A8-32×	A24-61	A10-52,84	THRU A	23-5	2,84			
213	A8-31%	A24-32	A10-27,54	THRU A	23-2	7,54			
214	A8-29×	A24-34	A10-28,56	THRU A	23-2	18,56			
215	A8-28#	A24-46	A10-31,58						
216	A8-27×	A24-44	A10-55,60	THRU A	123-5	5,60			
217	A8-26%	A24-14	A10-57,78						
218	A8-25#	A24-16	A10-61,79	THRU A	123-6	1,79			
219	A8-30×	A24-20	A10-65,82						
225	A7-53	A8-82×	A24-4	A24-80) ×	A10-24	THRU A	23 - 24	
294	A8-69#	A24-52							
	A24-79								
302	A3-60	A4-28							
303	A3-72	A4-26	A24-41×						
304	A3-32	A24-36*							
305	A1-6	A7-8*	A24-67	A104-	ŧ 2	A107-7	0		
	A10-66 T	HRU A23-66							
324	A7-22	A24-7%							
325		A24-13×							
		A24-62%							
477	A3-53*		A24-73	A107-	73				
495	A24-9*	A107-67							



FF DEFI

PRSI	=	"N
ENABLE A	=	EN
ENABLE B	=	ΕN
LOAD	=	"N
LOAD 2	=	"N
DUN	_	

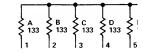
NOTES:

- RESISTANCE VALUES ARE VALUES ARE IN UF UNLES
- NUMERALS WITHIN BRACI LIST REFERENCE NUMBEF
- JUMPERS W1 THRU W4 ARI TO THE MEMORY CAPACIT AS SHOWN BELOW.

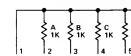
MEMORY CAPACITY	JUMPI CONNE
2K 4K 6K 8K 12K 14K	NONE W4 W3 W3,W4 W2,W4 W2,W3 W2,W3,W
24K 32K	W2,W3,V W1,W3,V W1,W2,V

- 4. JUMPER W5 IS CONNECTED I IS USED AND IS REMOVED W IS USED.
- 5. NO INTERNAL CONNECTION 27, 29, AND 37 ON CARD REV
- 6. CONNECTION BETWEEN +4.8 RESPECTIVE COMMON RETU PROVIDED ON CARD REV. 1

SCHEMATIC DIAG FOR RESISTOR NETV



SCHEMATIC DIAC



PIN IDENTIFICATION SWITCH-LAMP ASSE S1-DS1 THRU S5-





REAR VIEW



"NOT" PRESET INTERNAL

EA = ENABLEA

EB = ENABLEB

= "NOT" LOAD

= "NOT" LOAD 2 = "NOT" RUN

E VALUES ARE IN OHMS AND CAPACITANCE ₹E IN UF UNLESS OTHERWISE SPECIFIED'

WITHIN BRACKETS [] ARE WIRING

1 THRU W4 ARE CONFIGURED ACCORDING MORY CAPACITY OF THE COMPUTER, BELOW.

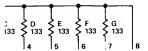
JUMPERS CONNECTED	JUMPERS REMOVED
NONE	W1,W2,W3,W4
W4	W1,W2,W3
W3	W1,W2,W4
W3,W4	W1,W2
W2,W4	W1,W3
W2,W3	W1,W4
W2,W3,W4	W1
W1.W3.W4	W2
W1,W2,W3,W4	NONE

S CONNECTED WHEN A DISC-TYPE LOADER IS REMOVED WHEN A PAPER TAPE LOADER

L CONNECTION IS PROVIDED TO PINS 25, 26, 7 ON CARD REV. 1128.

I BETWEEN +4.85V SUPPLIES AND THE COMMON RETURN LINES ARE NOT N CARD REV. 1128.

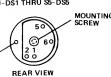
HEMATIC DIAGRAM



HEMATIC DIAGRAM
STOR NETWORKS R1 R2 R3

3 C D E F G
IK 1K 1K 1K 1K 1K

IDENTIFICATION FOR CH-LAMP ASSEMBLIES I-DS1 THRU S5-DS5



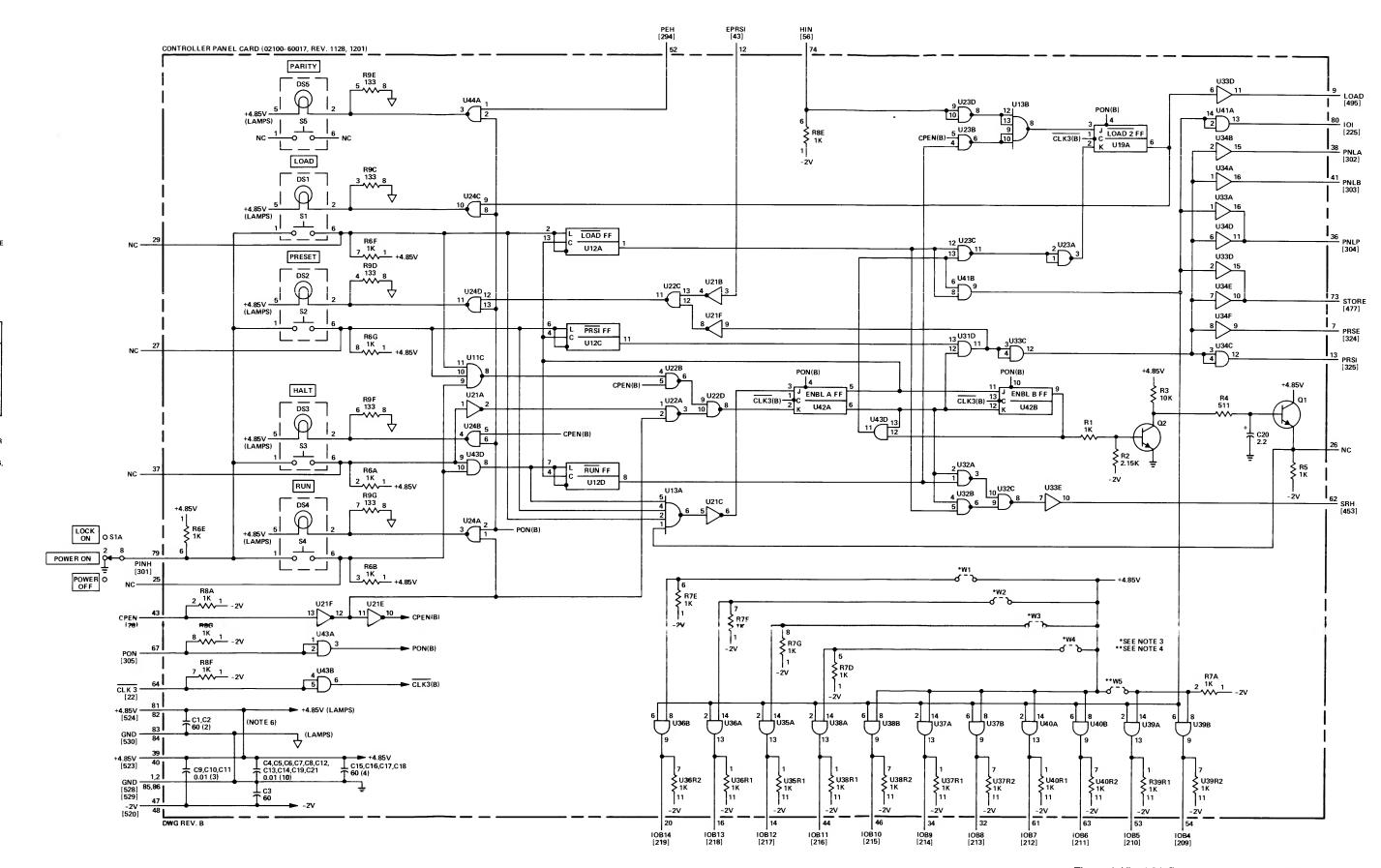


Figure 4-15. A24 Controller Panel Card (Option 001), Parts Location and Schematic Diagrams

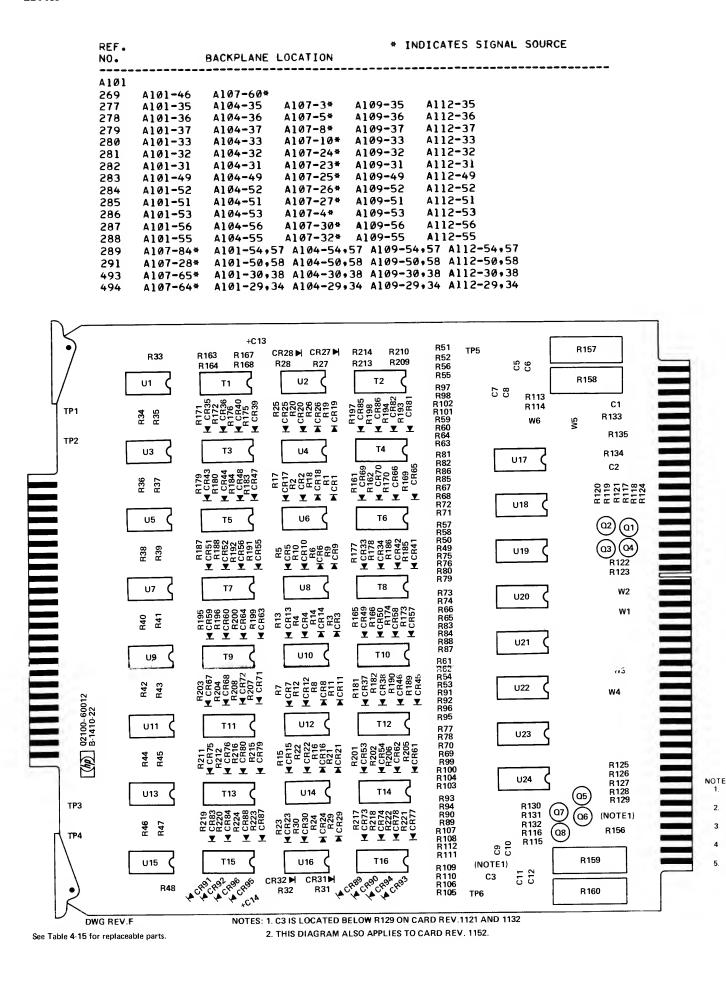
Table 4-15. A101, A104, A109, A112 X-Y Driver/Switch Card, Replaceable Parts

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A131 A101C1 A101C2 A101C3 A101C5	C2100-60012 0160-2940 0160-2940 0160-2940 0160-0127	4 3 8	X-Y ORIVER/SWITCH CARD C:FXO MICA 470 PF 5% 300VOCW C:FXD MICA 470 PF 5% 300VOCW C:FXO MICA 470 PF 5% 300VOCW C:FXO CER 1.0 UF 20% 25VDCW	28480 72136 72136 72136 56289	02100-60012 R0M15F471J3C R0M15F471J3C R0M15F471J3C 5C13CS-CML
A101C6 A101C7 A101C8 A101C9 A101C10	0160-0127 0160-0127 0160-0127 0160-0127 0160-0127		C:FXO CER 1.0 UF 20% 25VOCW C:FXO CER 1.0 UF 20% 25VOCW C:FXO CER 1.0 UF 20% 25VOCW C:FXO CER 1.0 UF 20% 25VOCW C:FXD CER 1.0 UF 20% 25VOCW	5 289 5 289 5 289 5 289 5 289	5C13CS-CML 5C13CS-CML 5C13CS-CML 5C13CS-CML 5C13CS-CML
A101C11 A101C12 A101C13 A101C14 A101CK1 THRU A101CR96	0160-0127 0160-0127 0180-0161 0180-0161 1901-0040	2 96	C:FXO CER 1.0 UF 20% 25VOCW C:FXO CER 1.0 UF 20% 25VOCW C:FXO ELECT 3.3 UF 20% 35VOCW C:FXO ELECT 3.3 UF 20% 35VOCW OIODE: SILICON 30MA 30WV	5 6 289 5 6 289 5 6 289 5 6 289 0 7 263	5C13CS-CML 5C13CS-CML 1500335X003582-0YS 1500335X003582-0YS FDG1088
A101E1 A101E2 A101E3 A101E4	0360-0294 0360-0294 0360-0294 0360-0294	6	TERMINAL:SOLOER POINT TERMINAL:SOLOER POINT TERMINAL:SOLOER POINT TERMINAL:SOLDER POINT	28180 28180 28180 28180	0360-0294 0360-0294 0360-0294 0360-0294
A101E5 A101E6 A101Q1 A101Q2 A101Q3	0360-0294 0360-0294 1853-0015 1854-0019 1854-0019	4 4	TERMINAL:SOLOER POINT TERMINAL:SOLDER POINT TSTR:SI PNP TSTR:SI NPN TSTR:SI NPN	2 5 + 80 2 5 + 80 8 4 : 3 1 2 5 + 80 2 6 + 80	0360-0294 0360-0294 2N3640 1854-0019 1854-0019
A10104 A10105 A10106 A10107 A10108	1853-0015 1853-0015 1854-0019 1853-0015 1854-0019		TSTR:SI PNP TSTR:SI PNP TSTR:SI NPN TSTR:SI PNP TSTR:SI NPN	80131 80231 28/:80 80131 28/:80	2N3640 2N3640 1854-0019 2N3640 1854-0019
A101R1 THRU A101R32	0757-0280	36	R: FXO MET FLM 1K OHM 1% 1/8W	284.80	0757-0280
A101R32 A101R33 THRU A101R48	0698-3444	16	R:FXD MET FLM 316 OHM 1% 1/8W	28 80	0698-3444
A101R49 THRU	0757-0180	68	R:FXD MET FLM 31.6 OHM 1% 1/8W	28 80	0757-0180
A101R116 A101R117 A101R118 A101R119 A101R120 A101R121(NOTE 1) A101R121(NOTE 2) A101R122 A101R122 A101R124(NOTE 1) A101R125 A101R125 A101R126 A101R126 A101R127(NOTE 1) A101R127(NOTE 1) A101R127(NOTE 1) A101R128 A101R128 A101R130(NOTE 1) A101R13130(NOTE 2) A101R131 A101R1313 A101R132 A101R133 A101R134 A101R135	0757-0280 0757-0280 0698-3437 0757-0421 0757-0274 0757-0274 0757-0421 0757-0274 0757-0421 0757-0280 0757-0280 0757-0280 0757-0280 0757-0421 0698-3437 0757-0421 0698-3437 0757-0421 0757-0421 0757-0421 0757-0421 0757-0421 0757-0421 0757-0421 0757-0421 0757-0421 0757-1090 0757-1090	4 4 4 4	R:FXD MET FLM 1K OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W R:FXD MET FLM 133 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 125 OHM 1% 1/8W R:FXD MET FLM 1825 OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W R:FXD MET FLM 125 OHM 1% 1/8W R:FXD MET FLM 125 OHM 1% 1/8W R:FXD MET FLM 123 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXD MET FLM 825 OHM 1% 1/8W R:FXO MET FLM 825 OHM 1% 1/8W R:FXO MET FLM 825 OHM 1% 1/8W R:FXO MET FLM 825 OHM 1% 1/8W R:FXO MET FLM 825 OHM 1% 1/8W R:FXO MET FLM 825 OHM 1% 1/8W R:FXO MET FLM 825 OHM 1% 1/8W R:FXO MET FLM 825 OHM 1% 1/8W R:FXO MET FLM 825 OHM 1% 1/2W R:FXO MET FLM 8261 OHM 1% 1/2W R:FXO MET FLM 8261 OHM 1% 1/2W	28 80 28 80	0757-0280 0757-0280 0698-3437 0757-0421 0757-0274 0757-0421 0757-0421 0757-0421 0757-0421 0757-0280 0757-0280 0757-0280 0757-0280 0757-0210 0698-3437 0757-0421 0698-3437 0757-0421 0698-3437 0757-0421 0698-3437 0757-0421 0698-3437 0757-0421 0698-3437 0757-0421 0757-0421 0757-0421 0757-0421 0757-0421 0757-0421 0757-0421 0757-0421 0757-0421 0757-1090
A101R157 A101K158 A101R159 A101R160	0811-2084 0811-2084 0811-2084 0811-2084	4	R:FXO WW 43 OHM 1% 5W R:FXO WW 43 OHM 1% 5W R:FXO WW 43 OHM 1% 5W R:FXO WW 43 OHM 1% 5W	28 4 80 28 4 80 28 4 80 28 4 80	0811-2084 0811-2084 0811-2084 0811-2084
A101R161 THRU A101R224	0757-0403	64	R:FXO MET FLM 121 OHM 1% 1/8W	28480	0757-0403
A101T1 THRU A101T16	9100-3130	16	TRANSFORMER: PULSE	28480	9100-3130
A101U1 THRU A101U16 A101U17 A101U18 A101U19 A101U20 A101U21	1821-0006 1820-0482 1820-0482 1820-0482 1820-0482 1820-0482	16 8	TSTR:QUAO NPN NETWORK IC:CTL 1 OF 8 DECODER IC:CTL 1 OF 8 DECODER IC:CTL 1 OF 8 DECODER IC:CTL 1 OF 8 DECODER IC:CTL 1 OF 8 DECODER IC:CTL 1 OF 8 OECODER	28 80 07 263 07 263 07 263 07 263 07 263	1821-0006 U68983849X U68983849X U68983849X U68983849X U68983849X
A101U22 A101U23 A101U24 A101W1 A101W2	1820-0482 1820-0482 1820-0482 8159-0005 8159-0005	6	IC:CTL 1 OF 8 DECOOER IC:CTL 1 OF 8 DECOOER IC:CTL 1 OF 8 DECODER JUMPER WIRE JUMPER WIRE	07253 07253 07253 28430 28430	U68983849X U68983849X U68983849X 8159-0005 8159-0005

2. USED ON CARD REV. 1410 AND SUBSEQUENT.

Table 4-15. A101, A104, A109, A112 X-Y Driver/Switch Card, Replaceable Parts (Continued)

Reference Designation	HP Part Number	 A109, A112 X-Y Driver/Switch Card, Replaceabl Description	Mfr Code	Mfr Part Number
A101W3 A101W4 A101W5 A101W6 A104 A109 A112	8159-0005 8159-0005 8159-0005 8159-0005	JUMPER WIRE JUMPER WIRE JUMPER WIRE JUMPER WIRE JUMPER WIRE SAME AS A101, USE PREFIX A104 SAME AS A101, USE PREFIX A109 SAME AS A101, USE PREFIX A112	28480 28480 28480 28480	8159-0005 8159-0005 8159-0005 8159-0005



X-Y DRIVER/SWITCH CARD (02100-60012 REV. 1121, 1132, 1 XAO XA1 XA2 XA3 XA4 XA5 \$\frac{1}{2}\$ \$\frac{1}{1}\$ \$\frac{1}{16}\$ \$\frac{1}{15}\$ \$\frac{1}{12}\$ \$\frac{1}{11}\$ XA DECODER E1 E2 22 21 20 [277] MRO [278] MR1 361 [279] MR2 4 3 6 7 8 E1 E2 22 21 20 XT2 291 W1 XB DECODER [494] 2 1 16 15 12 1 XB0 XB1 XB2 XB3 XB4 XB5 XC DECODER XT1 [493] E1 E2 22 21 20 4 3 6 7 8 [280] MR3 [281] MR4 321 [282] MR5 311 4 3 6 7 8 E1 E2 22 21 20 XD DECODER U18 2 1 16 15 12 1 YA DECODER U21 E1 E2 22 21 20 [283] MR6 [284] MR7 521 [285] MR8 E1 E2 22 21 20 MWTY **W**3 YB DECODER [291] 12 11 16 15 12 YBO YB1 YB2 YB3 YB4 YB! YC0 YC1 YC2 YC3 YC4 YCE \$2 \$1 \$16 \$15 \$12 \$7 MRTY YC DECODER U23 E2 24 21 20 MOD2/3 4 4 3 6 [269] [286] MR9 53[[287] MR10 56 [288] MR11 55 4 3 6 7 8 E1 E2 22 21 20 YD DECODER S: RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE 12 11 116 115 112 1 YD0 YD1 YD2 YD3 YD4 YD VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED. INDICATES PIN NUMBERS OF 48-PIN CONNECTOR. ALL OTHER PIN NUMBERS ARE FOR 86-PIN CONNECTOR. NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFER ENCE NUMBERS. C3 WIRED IN POSITION SHOWN BY DASHED LINE ON CARD R121, R124, R127, AND R130 ARE 1.2K ON CARD REV. 1121, 1132, DWG REV. C

REV. 1132 AND 1121.

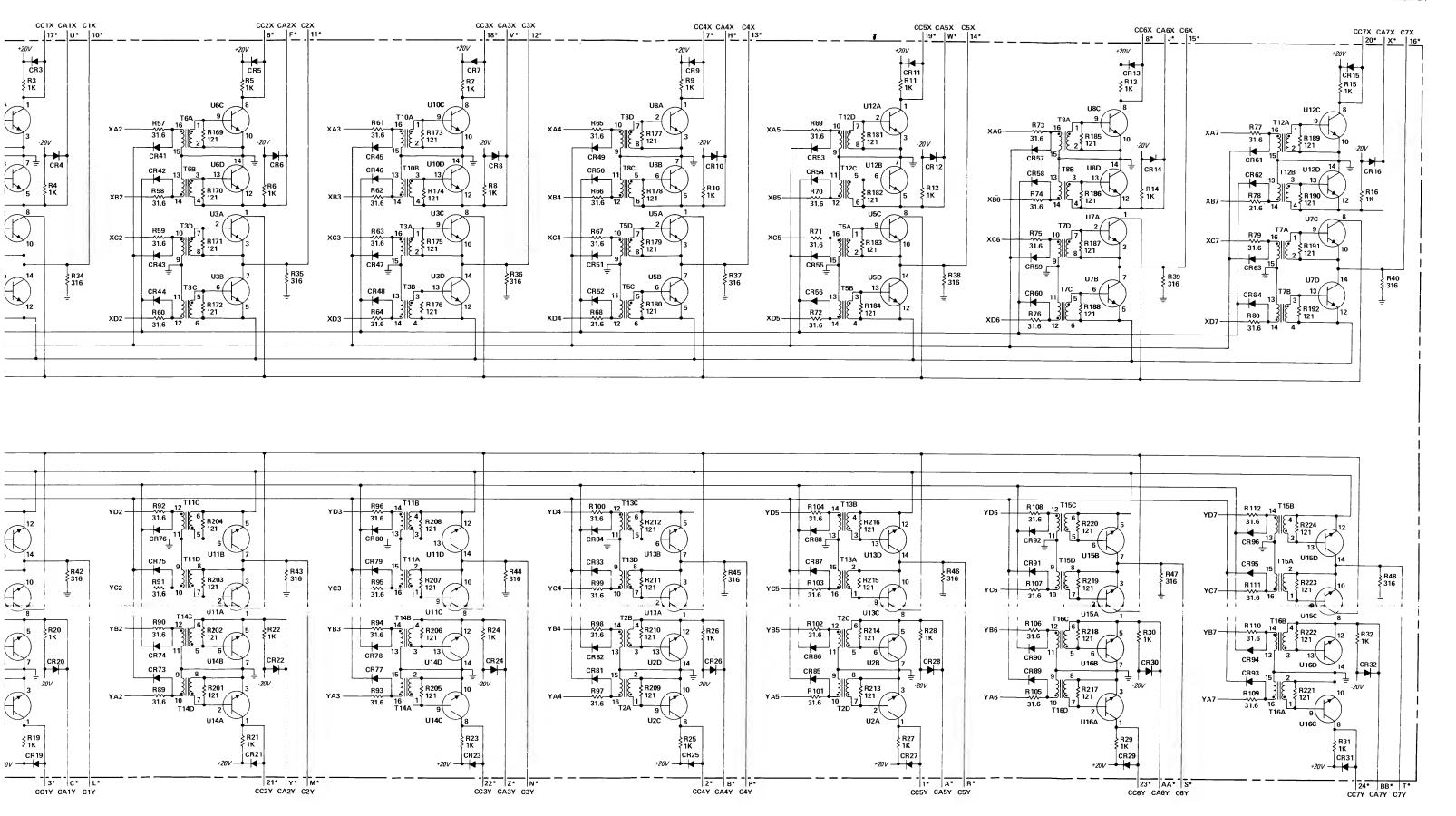


Figure 4-16. A101 X-Y Driver/Switch Card, Parts Location and Schematic Diagrams

Table 4-16. A102, A103 Core Stack/Sense Amplifier Card (4K), Replaceable Parts

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A102 A102A1 A102C1 A102C2 A102C3	C210060040 5087-0C02 0160-2055 0160-2055 0160-2055	2 1 9	CORE STACK/SENSE AMPL CARO-4K 4K CORE STACK ASSY C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW	2 34 80 2 34 80 5 52 89 5 2 89 5 2 89	02100-6004¢ 5087-0002 C023F101F103Z522-CDH C023F101F103Z522-COH C023F101F103Z522-COH
A102C4 A102C5 A102C6 A102C7 A102C8	0160-2055 C160-0127 C160-0127 C160-0127 0160-0127	9	C:FXD CER 0.01 UF +80-20% 100 VOCW C:FXO CER 1.0 UF 20% 25 VOCW C:FXD CER 1.0 UF 20% 25 VOCW C:FXO CER 1.0 UF 20% 25 VOCW C:FXO CER 1.0 UF 20% 25 VOCW	50289 50289 50289 50289 50289	C023F101F103ZS22~C0H 5C13CS~CML 5C13CS~CML 5C13CS~CML 5C13CS~CML
A102C9 A102C10 A102C11 A102C12 A102C13	0160-0127 0160-0127 0160-2055 0160-2055 0160-2055		C:FXO CER 1.0 UF 20% 25VOCW C:FXO CER 1.0 UF 20% 25VDCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW	54.289 54.289 54.289 54.289 54.289	5C13CS-CML 5C13CS-CML C023F101F103ZS22-COH C023F101F103ZS22-COH C023F101F103ZS22-COH
A102C14 A102C15 A102C16 A102C17 A102C18	0160-2055 0160-2055 0160-0127 0160-0127 0160-2307	1	C:FXO CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VOCW C:FXD CER 1.0 UF 20% 25VOCW C:FXO CER 1.0 UF 20% 25VDCW C:FXO MICA 47 PF 5%	5# 2 89 5# 2 89 5# 2 89 5# 2 89 5# 2 89 2 8 4 80	C023F101F103ZS22C0H C023F101F103ZS22C0H 5C13CSCML 5C13CSCML 0160-2307
#102C19 (NOTE1) #102C20 (NOTE1) #102C21 (NOTE1) #102C22 (NOTE1) #102CR1	0160-0127 0180-0229 0180-0229 0180-0229 1910-0016	3	C:FXD CER 1.0 UF 20% 25VOCW C:FXO ELECT 33 UF 10% 10VDCW C:FXO ELECT 33 UF 10% 10VOCW C:FXO ELECT 33 UF 10% 10VDCW 01U0E:GERMANIUM 100MA/0.85V 60PIV	5\$289 28480 28480 28480 28432	5C13C SCML 0180-0229 0180-0229 0180-0229 02361
#10201 #10202 #10203 #10204 #10205	1854-0215 1853-0686 1853-0686 1854-0215 1853-0686	18 35	TSTR:SI NPN TSTR:SI PNP TSTR:SI PNP TSTR:SI NPN TSTR:SI PNP	80131 80131 80131 80131 80131	2N3904 2N5087 2N5087 2N3904 2N5087
A10206 A10207 A10208 A10209 A102010	1853-0086 1854-0215 1853-0086 1853-0086 1854-0215		TSTR:SI PNP TSTR:SI NPN TSTR:SI PNP TSTR:SI PNP TSTR:SI NPN	80131 80131 80131 80131 80131	2N5087 2N5087 2N5097 2N5087 2N5087 2N3904
A102011 A102012 A102013 A102014 A102015	1853-0086 1853-0086 1854-0215 1853-0086 1853-0086		TSTR:SI PNP TSTR:SI PNP TSTR:SI NPN TSTR:SI PNP TSTR:SI PNP	80:31 80:31 80:31 80:31 80:31	2N5087 2N5087 2N3904 2N5087 2N5087
A102C16 A102Q17 A102Q18 A102Q19 A102G20	1854-0215 1853-0086 1853-0086 1854-0215 1853-0086		TSTR:SI NPN TSTR:SI PNP TSTR:SI PNP TSTR:SI NPN TSTR:SI PNP	8Q.31 8Q.31 8Q.31 8Q.31 8Q.31	2N3904 2N5087 2N5087 2N3904 2N5087
A102U21 A102U22 A1U2U23 A1U2U24 A1U2U25	1853-0086 1854-0215 1853-0086 1853-0086 1854-0215		TSTR:SI PNP TSTR:SI NPN TSTR:SI PNP TSTR:SI PNP TSTR:SI NPN	805 31 805 31 805 31 805 31 805 31	2N5087 2N3904 2N5087 2N5087 2N3904
A102026 A102027 A102028 A102029 A102030	1853-0086 1853-0086 1853-0086 1854-0215 1853-0086		TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI NPN TSTR:SI PNP	8 00 31 8 00 31 8 00 31 8 00 31 8 00 31	2N5087 2N5087 2N5087 2N5087 2N3934 2N5087
A102Q31 A102Q32 A102Q33 A102Q34 A102Q35	1853-0086 1854-0215 1853-0086 1853-0086 1854-0215		TSTR:SI PNP TSTR:SI NPN TSTR:SI PNP TSTR:SI PNP TSTR:SI NPN	80# 31 80# 31 80# 31 80# 31 80# 31	2N5087 2N3904 2N5087 2N5087 2N3904
A102036 A102037 A102038 A102039 A102040	1853-0086 1853-0086 1854-0215 1853-0086 1853-0086		TSTR:SI PNP TSTR:SI PNP TSTR:SI NPN TSTR:SI PNP TSTR:SI PNP	801 31 801 31 801 31 801 31 801 31	2N5087 2N5087 2N5087 2N3904 2N5087 2N5087
A102041 A102042 A102043 A102044 A102045	1854-0215 1853-0086 1853-0086 1854-0215 1853-0086		TSTR:SI NPN TSTR:SI PNP TSTR:SI PNP TSTR:SI NPN TSTR:SI NPN TSTR:SI PNP	801 31 801 31 801 31 801 31 801 31	2N3904 2N5087 2N5087 2N3904 2N5087
A102046 A102047 A102048 A102049 A102050	1853-0086 1854-0215 1853-0086 1853-0086 1854-0215		TSTR:SI PNP TSTR:SI NPN TSTR:SI PNP TSTR:SI PNP TSTR:SI NPN	80131 80131 80131 80131	2N5087 2N3904 2N5087 2N5087 2N3904

4-111

Table 4-16. A102, A103 Core Stack/Sense Amplifier Card (4K), Replaceable Parts (Continued)

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A102051 A102052 A102053 A102R1 A102R2	1853-0086 1853-0086 1854-0215 0698-7310 0757-0290	34 17	TSTR: SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI NPN R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO MET FLM 6.19K OHM 1% 1/8W	80131 80131 80131 28480 28480	2N5087 2N5087 2N3904 0698-7310 0757-0290
A102R3 A102R4 A102R5 A102R6 A102R7	0698-3447 0698-3447 0757-0290 0698-7310	17	R:FXO MET FLM 422 OHM 1% 1/8W R:FXO MET FLM 422 OHM 1% 1/8W R:FXO MET FLM 6-19K OHM 1% 1/8W R:FXO FLM 1-65K OHM 0-25% 1/8W R:FXO FLM 1-65K OHM 0-25% 1/8W	2 84 80 2 84 80 2 84 80 2 84 80 2 84 80	0698-3447 0698-3447 0757-0290 0698-7310
A102R8	C757-0290		R:FXO MET FLM 6.19K OHM 1% 1/8W	28480	0757-0290
A102R9	0698-3447		R:FXO MET FLM 422 OHM 1% 1/8W	28480	0698-3447
A102R10	0698-3447		R:FXO MET FLM 422 OHM 1% 1/8W	28480	0698-3447
A102R11	0757-0290		R:FXO MET FLM 6.19K OHM 1% 1/8W	28480	0757-0290
A102R12	C698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	28480	0698-7310
A102R13	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	2 84 80	0698-7310
A102R14	0757-0290		R:FXO MET FLM 6.19K OHM 1% 1/8W	284 80	0757-0290
A102R15	C698-3447		R:FXO MET FLM 422 OHM 1% 1/8W	2 84 80	0698-3447
A102R16	C698-3447		R:FXO MET FLM 422 OHM 1% 1/8W	2 84 80	0698-3447
A102R17	0757-0290		R:FXO MET FLM 6219K OHM 1% 1/8W	2 84 80	0757-0290
A102R18	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	284 80	0698-7310
A102R19	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	284 80	0698-7310
A102R20	0757-0290		R:FXO MET FLM 6.19K OHM 1% 1/8W	284 80	0197-0290
A102R21	0698-3447		R:FXO MET FLM 422 OHM 1% 1/8W	284 80	0698-3447
A102R21	0698-3447		R:FXO MET FLM 422 OHM 1% 1/8W	284 80	0698-3447
#102R23 #102R25 #102R25 #102R26	0757-0290 0698-7310 0698-7310 0698-7310 0698-7310		R:FXO MET FLM 6.19K OHM 1% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W	2 84 80 284 80 2 84 80 2 84 80 2 84 80	0757-0290 0698-7310 0698-7310 0698-7310 0698-7310
A102R28	C698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	28480	0698-7310
A102R29	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	28480	0698-7310
A102R30	C698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	28480	0698-7310
A102R31	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	28480	0698-7310
A102R32	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	28480	0698-7310
A102R33 A102R34 A102R35 A102R36 A102R37	C698-3441 0757-0280 0757-0417 0757-0420 0698-0082	1 1 1 1	R:FXO MET FLM 215 OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXO MET FLM 562 OHM 1% 1/8W R:FXO MET FLM 750 CHM 1% 1/9W R:FXO MET FLM 464 OHM 1% 1/8W	28480 28480 28480 28480 28480	0698-3441 0757-0280 0757-0417 0757-0420 0698-0082
A 10 2R 38 A 10 2R 39 A 10 2R 40 A 10 2R 41 A 10 2R 42	1810-0045 1810-0045 2100-2061 1810-0045 C698-7310	3 1	RESISTOR PACK:7 RES. 200 CHM 5% 0.15W RESISTOR PACK:7 RES. 200 CHM 5% 0.15W R:VAR FLM 200 CHM 10% LIN 1/2H RESISTOR PACK:7 RES. 200 CHM 5% 0.15W R:FXO FLM 1.65K CHM 0.25% 1/8W	28480 28480 28480 28480 28480 28480	1810-0045 1810-0045 2100-2061 1810-0045 0698-7310
£102R43	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	28480	0698-7310
A102R44	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	28480	0698-7310
£102R45	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	28480	0698-7310
A102R46	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	28480	0698-7310
A102R47	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	28480	0698-7310
A102R48	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	284 80	0698-7310
A102R49	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	284 80	0698-7310
A102R50	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	284 80	0698-7310
A102R51	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	284 80	0698-7310
A102R52	0698-3447		R:FXO MET FLM 422 OHM 1% 1/8W	284 80	0698-3447
A102R53 A102R54 A102R55 A102R56 A102R57	0757-0290 0698-7310 0757-0290 0698-3447		R:FXO MET FLM 6.19K OHM 1% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO MET FLM 6.19K OHM 1% 1/8W R:FXO MET FLM 422 OHM 1% 1/8W R:FXO MET FLM 422 OHM 1% 1/8W	28480 28480 28480 28480 28480 28480	0757-0290 0698-7310 0757-0290 0698-3447 0698-3447
A102R58	0757-0290		R:FXO MET FLM 6-19K OHM 1% 1/8W	284 80	0757-0290
A102R59	0698-7310		R:FXO FLM 1-65K OHM 0-25% 1/8W	284 80	· 0698-7310
A102R60	0698-7310		R:FXO FLM 1-65K CHM 0-25% 1/8W	284 80	0698-7310
A102R61	0757-0290		R:FXO MET FLM 6-19K OHM 1% 1/8W	284 80	0757-0290
A102R62	0698-3447		R:FXO MET FLM 6-19K OHM 1% 1/8W	284 80	0698-3447
#102R63	0698-3447		R:FXO MET FLM 422 OHM 1% 1/8W	284 80	0698-3447
#102R64	0757-0290		R:FXO MET FLM 6.19K OHM 1% 1/8W	284 80	0757-0290
#102R65	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	284 80	0698-7310
#102R66	0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W	284 80	0698-7310
#102R67	0757-0290		R:FXO MET FLM 6.19K OHM 1% 1/8W	284 80	0757-0290
A102R68 A102R69 A102R70 A102R71 A102R72	0698-3447 0698-3447 0757-0290 0698-7310		R:FXO MET FLM 422 OHM 1% 1/8W R:FXO MET FLM 422 OHM 1% 1/8W R:FXO MET FLM 6.19K OHM 1% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W	28480 28480 28480 28480 28480	0698-3447 0698-3447 0757-0290 0698-7310 0698-7310

Table 4-16. A102, A103 Core Stack/Sense Amplifier Card (4K), Replaceable Parts (Continued)

Reference HP Part Number Otto Description Mfr					
Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A1D2R 73 A102R74 A102R75 A102R75 A102R77 A102R78 A1D2U1 A102U2 A102U2 A102U3 A102U4 A102U5	0757-D290 0698-3447 0698-3447 0757-029D 0698-7310 0757-0401 1858-0001 1858-0001 1858-0001 1858-0001	1 9	R:FXD MET FLM 6.19K DHM 1% 1/8W R:FXD MET FLM 422 DHM 1% 1/8W R:FXD MET FLM 422 DHM 1% 1/8W R:FXD MET FLM 6.19K DHM 1% 1/8W R:FXD FLM 1.65K DHM 0.25% 1/8W R:FXD MET FLM 100 OHM 1% 1/8W TSTR ARRAY:DUAL DIFF AMPL W/CONST CUR TSTR ARRAY:DUAL DIFF AMPL W/CONST CUR TSTR ARRAY:DUAL DIFF AMPL W/CONST CUR TSTR ARRAY:DUAL DIFF AMPL W/CONST CUR TSTR ARRAY:DUAL DIFF AMPL W/CONST CUR TSTR ARRAY:DUAL DIFF AMPL W/CONST CUR BALUN MDDULE	284 8D 284 8D 284 8D 284 8D 284 8D 2735 02735 02735 02735 284 8D	0757-029D 0698-3447 0698-3447 0757-029D 0698-731D 0757-0401 80381 80381 80381 80381 9060-0111
#1D2U6 #102U7 #102U8 #102U9 #1D2U1D	0960-0111 C960-0111 C96D-0111 1820-037D C960-D111	1	BALUN MODULE 8ALUN MODULE 8ALUN MODULE 1C:TTL HS QUAD 2-INPT NAND GATE 8ALUN MODULE	28480 28480 2848D \$1295 28480	0960-D111 0960-D111 D960-D111 SN74HOON 096D-D111
A1D2U11 A1D2U12 A1O2U13 A1O2U14 A1O2U15	0960-0111 C960-D111 0960-0111 0960-0111 1858-0001		8ALUN MUDULE 8ALUN MODULE 8ALUN MODULE BALUN MODULE TSTR ARRAY:DUAL DIFF AMPL W/CONST CUR	28480 2948D 2348D 2348D 02735	0960-0111 0960-0111 0960-0111 0960-0111 80381
#1D2U16 #1D2U17 #102U18 #1D2U19 #1D2U36 THRU #102U51	1858-0CD1 1858-0D01 1858-DC01 1858-0001 5D87-1013	16	TSTR ARRAY:DUAL DIFF AMPL W/CONST CUR TSTR ARRAY:DUAL DIFF AMPL W/CONST CUR TSTR ARRAY:DUAL DIFF AMPL W/CONST CUR TSTR ARRAY:DUAL DIFF AMPL W/CCNST CUR DIODE MODULE SAME AS A102, USE PREFIX A103	02735 02735 02735 02735 02735 2348D	8D381 8D381 8D381 8D381 5D87-1013
		; ;			

	j.		
			1

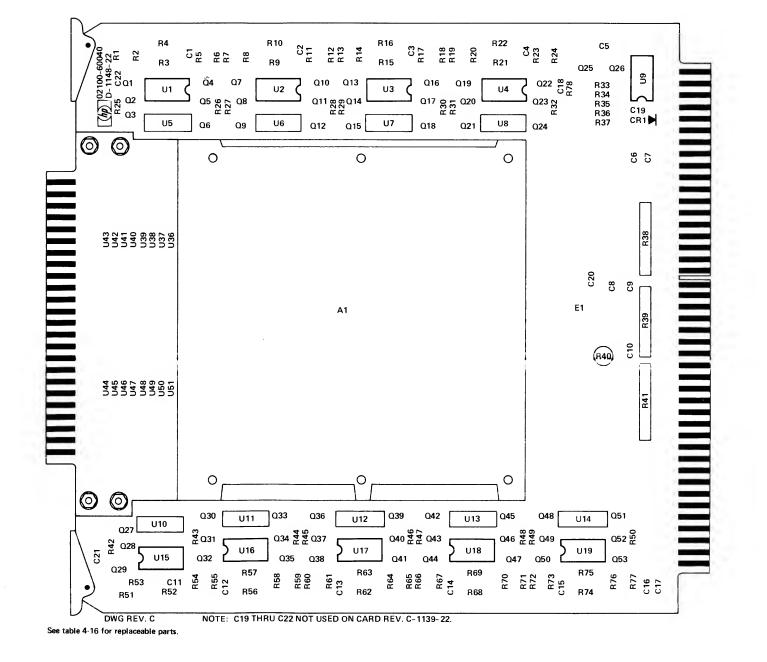
2100A

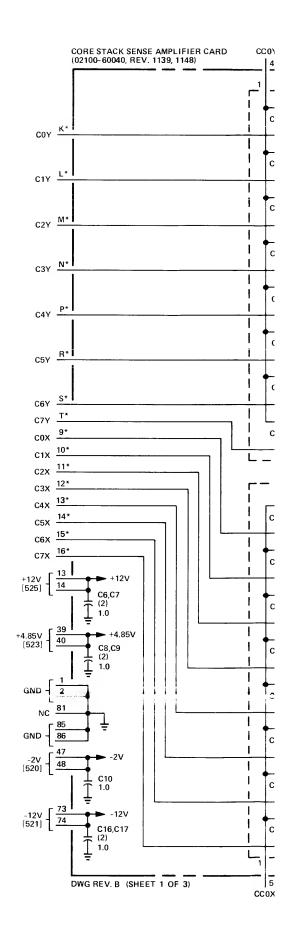
RETURN THIS CIRCUIT CARD TO THE FACTORY FOR REPAIR. FIELD REPLACEMENT OF ANY COMPONENT WILL VOID THE WARRANTY ON THE CARD.

TO AVOID BREAKING WIRES IN CORE STACK A1, DO NOT PRESS ON THE TOP OR BOTTOM OF THE STACK.

NOTES:

- THIS CARD MUST NOT BE REPAIRED IN THE FIELD. FIELD REMOVAL OR REPLACEMENT OF ANY COMPONENT VOIDS THE WARRANTY ON THE CARD.
- RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.
- * INDICATES PIN NUMBERS OF 48-PIN CONNECTOR. ALL OTHER PIN NUMBERS ARE FOR 86-PIN CONNECTOR.
- 4. NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.
- EACH FERRITE CORE SHOWN REPRESENTS 4,096 CORES.
- † INDICATES SELECTED RESISTOR. R2, R5, AND R8 SELECTED FROM 5.11K, 5.62K, 6.19K, 6.81K, 7.50K, OR 8.25K. R11, R14, R17, R20, R23, R53, R55, R58, R61, R64, R67, R70, R73, R76 SELECTED FROM 5.62K OR 6.19K. NORMAL VALUES SHOWN.
- 7. C19 THRU C22 NOT USED ON CARD REV. 1139.





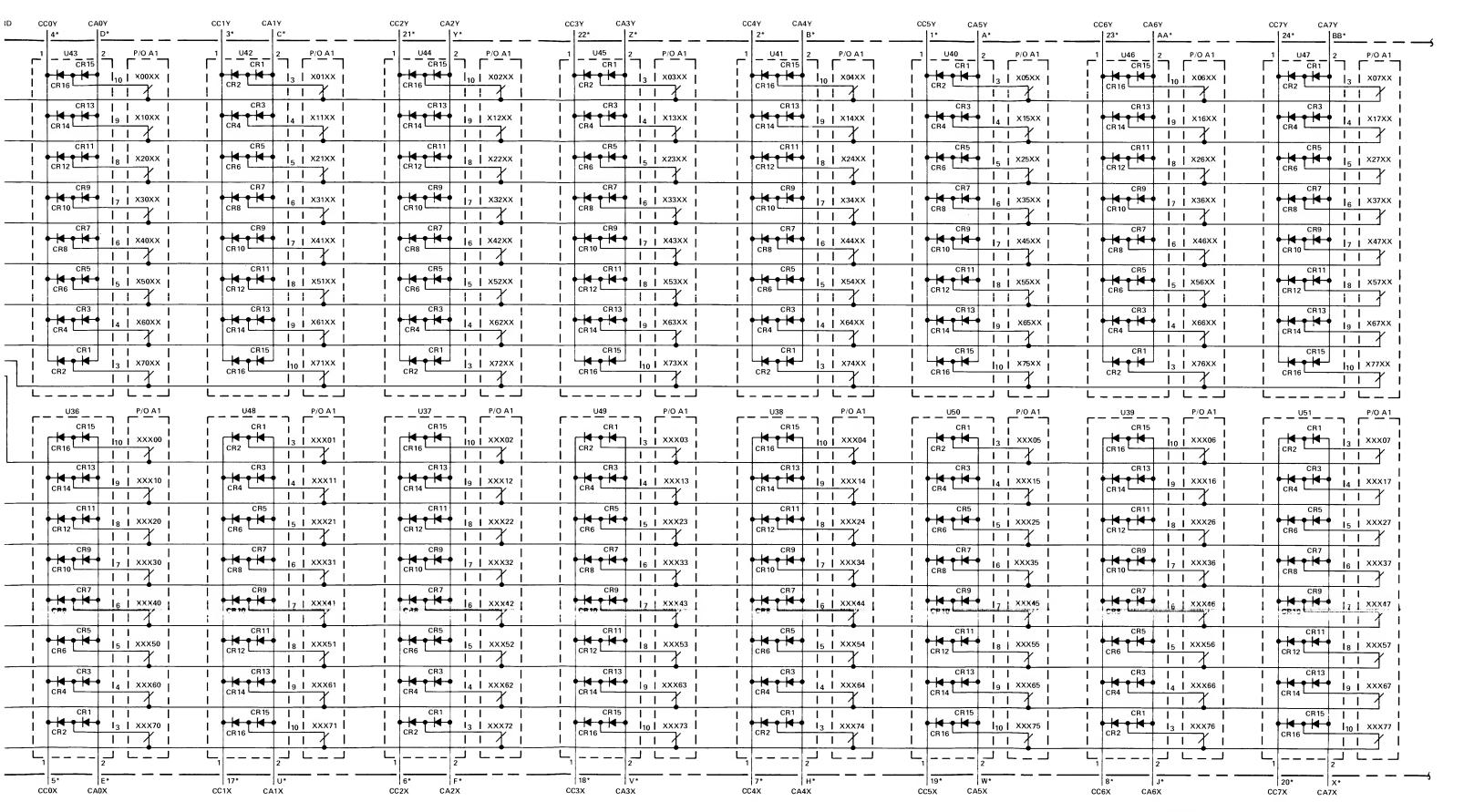


Figure 4-17. A102 Core Stack/Sense Amplifier Card (4K), Parts Location and Schematic Diagrams (Sheet 1 of 3)

REF.

NO.

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102

103

378 379

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382

383 384

385

A102 (4K) 95

A102-25

A102-27

A102-29

A102-31

A102-33

A102-35 A102-37

A102-41

A102-43

A102-18*

BACKPLANE LOCATION

A103-18* A107-11

A105-26#

A105-19#

A105-25*

A105-24*

A105-53*

A105-60*

A105-59#

A105-58*

A105-52* A102-15* A103-15* A107-13

A102-17* A103-17* A107-7

A102-20* A103-20* A107-9

A102-19* A103-19* A107-17

A102-22* A103-22* A107-15

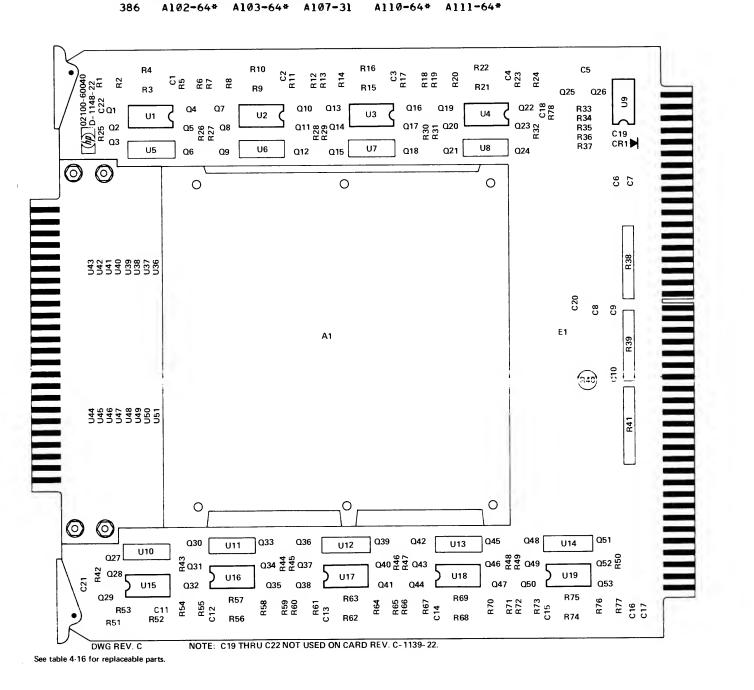
A102-21* A103-21* A107-19

A102-63* A103-63* A107-21

CAUTION

RETURN THIS CIRCUIT CARD TO THE FACTORY FOR REPAIR. FIELD REPLACEMENT OF ANY COMPONENT WILL VOID THE WARRANTY ON THE CARD.

TO AVOID BREAKING WIRES IN CORE STACK A1, DO NOT PRESS ON THE TOP OR BOTTOM OF THE STACK.



* INDICATES SIGNAL SOURCE

Al10-15* Al11-15*

Al10-18* All1-18*

A110-17* A111-17*

All0-20* All1-20*

All0-19* All1-19*

A110-22* A111-22*

Al10-21* All1-21*

A110-63* A111-63*

DWG REV. B (SHEET 2 OF 3) SEE SHEET 1 FOR NOTES

C5

R33 R34 R35 R36 R37

C20

U14

U19

85 65 F

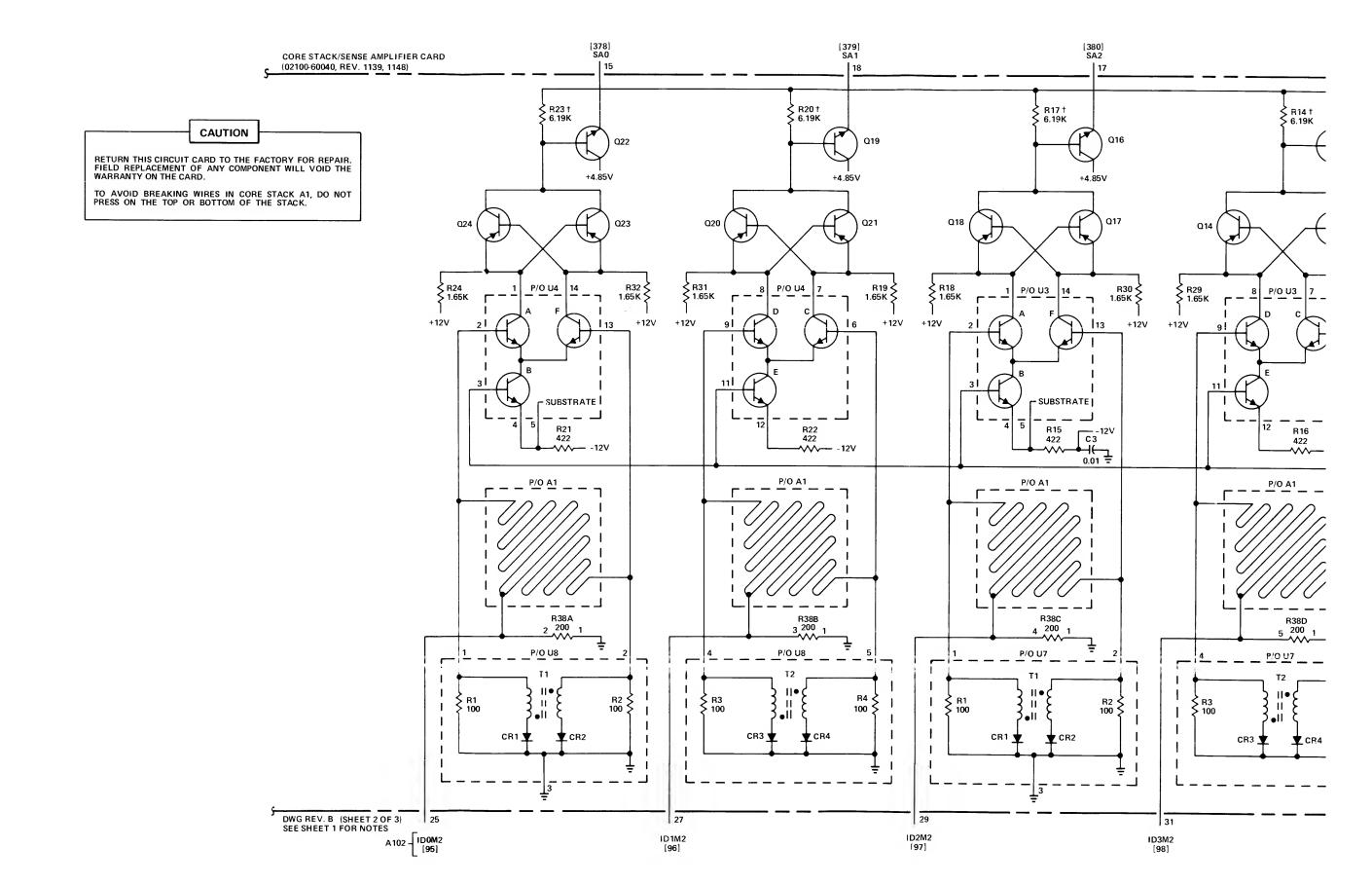
8

Q26

C19 CR1►

C6 C7

Q25



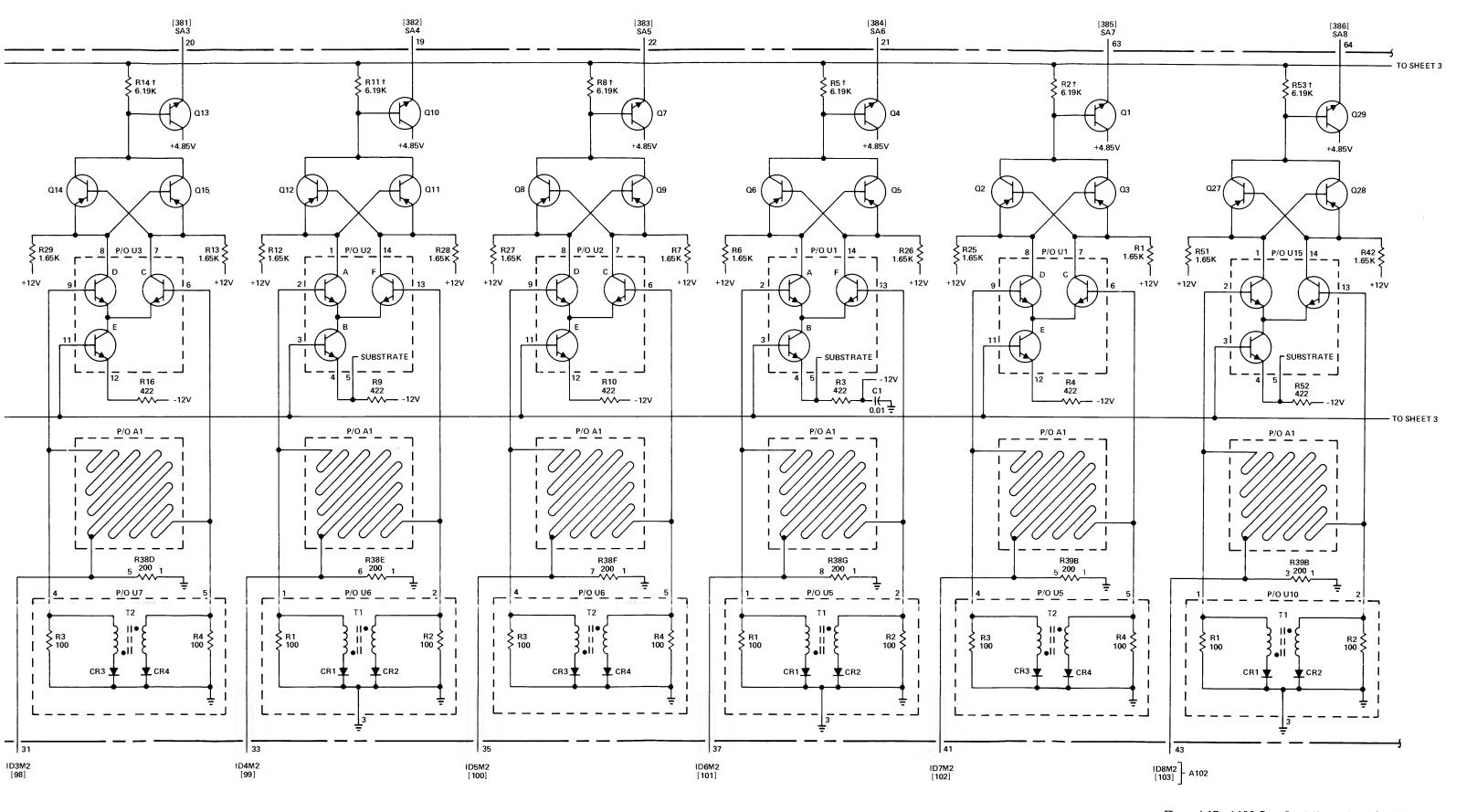


Figure 4-17. A102 Core Stack/Sense Amplifier Card (4K), Parts Location and Schematic Diagrams (Sheet 2 of 3)

CORE STACK/SENSE AMPLIFIEF (02100-60040, REV. 1139, 1148)

FROM SHEET

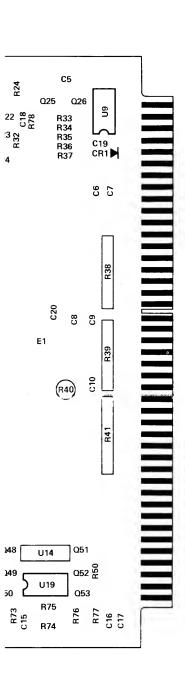
CAUTION

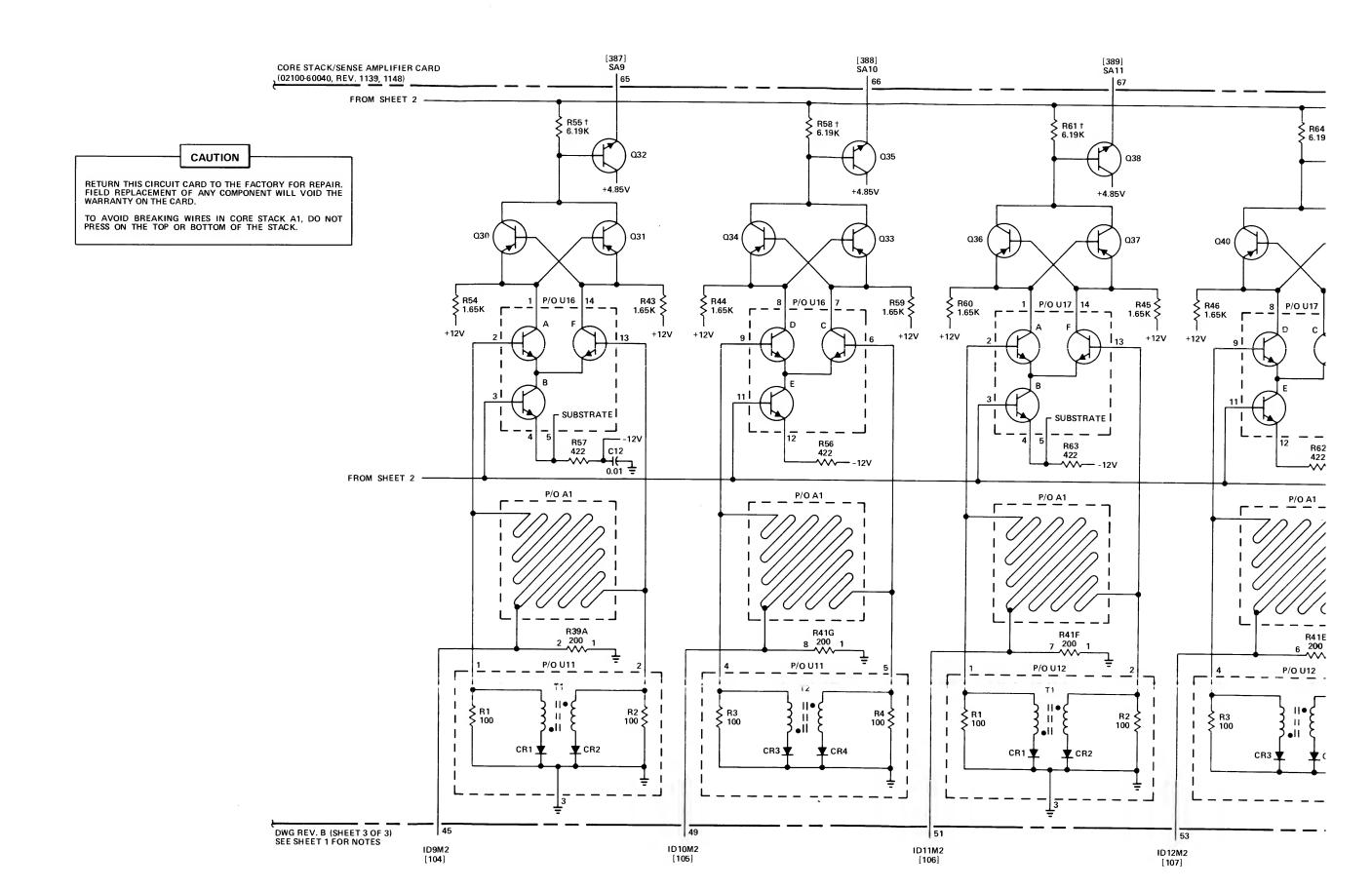
RETURN THIS CIRCUIT CARD TO THE FACTORY FOR REPAIR. FIELD REPLACEMENT OF ANY COMPONENT WILL VOID THE WARRANTY ON THE CARD.

TO AVOID BREAKING WIRES IN CORE STACK A1, DO NOT PRESS ON THE TOP OR BOTTOM OF THE STACK.

FROM SHEET 2

DWG REV. B (SHEET 3 OF 3) SEE SHEET 1 FOR NOTES L SOURCE





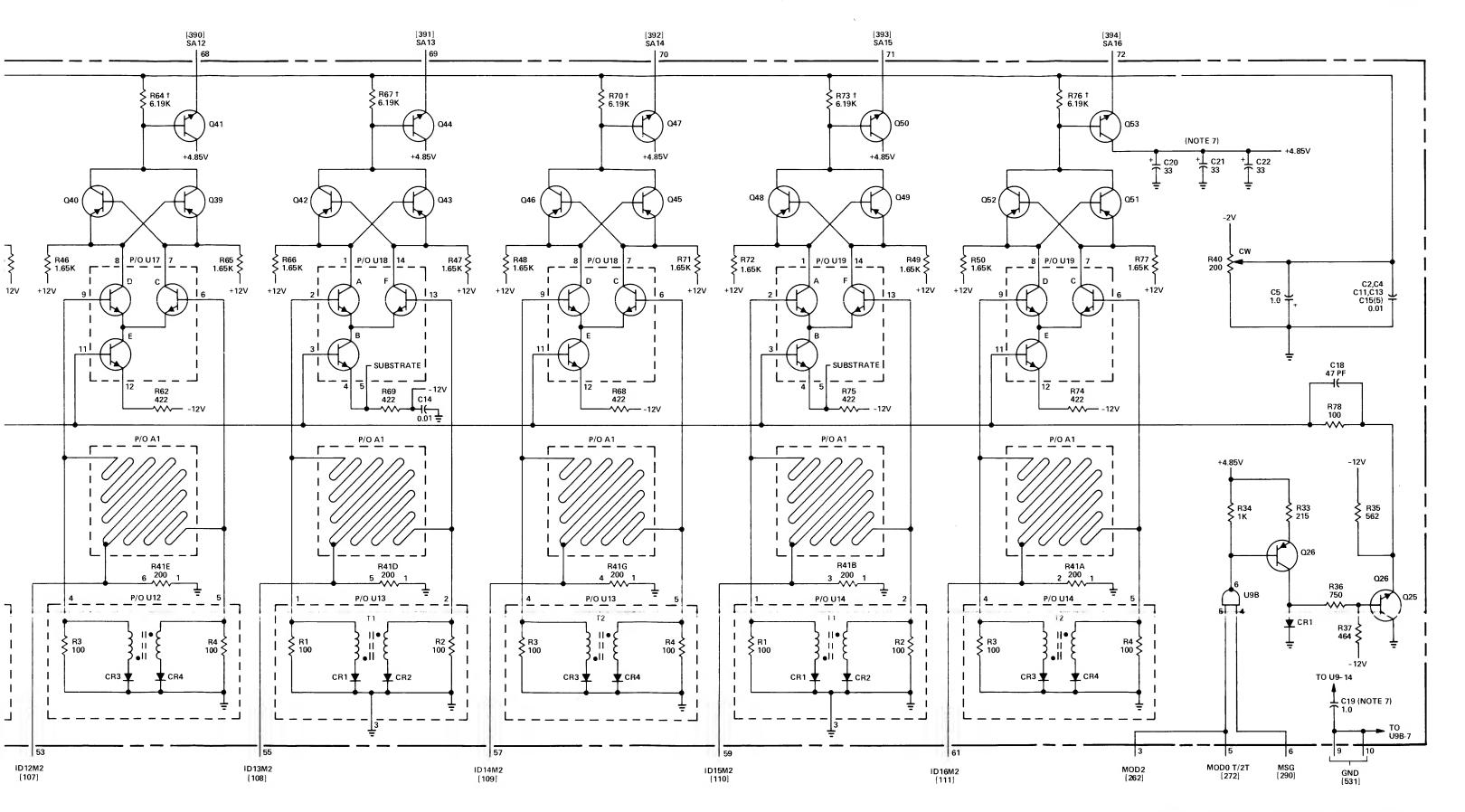


Figure 4-17. A102 Core Stack/Sense Amplifier Card (4K), Parts Location and Schematic Diagrams (Sheet 3 of 3)

Table 4-17. A102, A103, A110, A111 Core Stack/Sense Amplifier Card (8K), Replaceable Parts

Reference Designation	HP Part Number	Oty	Description	Mfr Code	Mfr Part Number
A102 OR A102 A102A1 A102C1 A102C2 A102C3	5060-8331 5060-8324 5087-0001 0160-0127 0160-0127	4 4 1 11	CORE STACK/SENSE AMPL CARD-8K CORE STACK/SENSE AMPL CARD-8K 8K CORE STACK ASSY C:FXD CER 1.0 UF 20% 25VDCW C:FXD-CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW	28 80 28 80 28 80 56 289 56 289 56 289	5060-8331 5060-8324 5087-0001 5C13CS-CML 5C13CS-CML 5C13CS-CML
A102C4 A102C5 A102C6 A102C7 A102C8	0160-0127 0160-0127 0160-0127 0160-0127 0160-0127		C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW	56289 56289 56289 56289 56289	5C13CS-CML 5C13CS-CML 5C13CS-CML 5C13CS-CML 5C13CS-CML
A102C9 A102C10(NOTE 1) A102C11(NOTE 1) A102C12(NOTE 1) A102C13(NOTE 1) A102C15(NOTE 3) A102C15(NOTE 3) A102C16(NOTE 3) A102CR1 A102CR1 A102CR2 A102L1 A102F3 THRU A102F6 (NOTE 2) A102Q1 A102Q3 A102Q4 A102Q5 A102Q6 A102Q7 A102Q8 A102Q9 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1 A102Q1	0160-0127 0160-0127 0160-0127 0180-0229 0180-0229 0180-0229 0160-2306 0160-2306 1910-0016 1910-0016 1910-016 0360-0294 0360-0294 9170-0847	3 2 2 2 2	C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD ELECT 33 UF 10% 10VDCW C:FXD ELECT 33 UF 10% 10VDCW C:FXD ELECT 33 UF 10% 10VDCW C:FXD MICA 27 PF 5% C:FXD MICA 27 PF 5% D:ODE:GE 100MA/0.85V 60PIV DIODE:GE 100MA/0.85V 60PIV TFRMINAL:SOLDER POINT TFRMINAL:SOLDER POINT CORE: FERRITE	56 2 8 9 56 2 8 9 56 2 8 8 9 28 4 8 8 0 28 4 4 3 0 28 4 4 3 0 28 4 4 3 0 28 4 4 3 0 28 4 4 3 0 28 4 4 3 0 28 4 3 1 0 28 4 3 1 0	5C13CS-CML 5C13CS-CML 5C13CS-CML 0180-0229 0180-0229 0180-0229 0160-2306 0160-2306 D2361 D2361 0360-0294 0360-0294 56-590-65-38
	1853-0086 1853-0086 1853-0086 1853-0086 1853-0086 1853-0086 1853-0086 1853-0086 1853-0086 1853-0086	36	TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP	80 151 80 151 80 151 80 151 80 151 80 151 80 151 80 151 80 151 80 151	2N 50 87 2N 50 87 2N 50 87 2N 50 87 2N 50 87 2N 50 87 2N 50 87 2N 50 87 2N 50 87 2N 50 87 2N 50 87 2N 50 87 2N 50 87 2N 50 87 2N 50 87
A102Q15 A102Q16 A102Q17 A102Q18 A102Q19	1853-0086 1853-0086 1853-0086 1853-0086 1854-0215	17	TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI NPN	80151 80151 80151 80151 80151	2N5087 2N5087 2N5087 2N5087 2N5087 2N3904
A102Q20 A102Q21 A102Q22 A102Q23 A102Q24	1854-0215 1854-0215 1854-0215 1854-0215 1854-0215		TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN	80 I 51 80 I 51 80 I 51 80 I 51 80 I 51	2N3904 2N3904 2N3904 2N3904 2N3904
A102Q25 A102Q26 A102Q27 A102Q28 A102Q29	1854-0215 1854-0215 1854-0215 1854-0215 1854-0215		TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN	80131 80131 80131 80131 80131	2N3904 2N3904 2N3904 2N3904 2N3904
A102Q30 A102Q31 A102Q32 A102Q33 A102Q34	1854-0215 1854-0215 1854-0215 1854-0215 1854-0215		TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN	80131 80131 80131 80131 80131	2N3904 2N3904 2N3904 2N3904 2N3904
A102Q35 A102Q36 A102Q37 A102Q38 A102Q39	1854-0215 1853-0086 1853-0086 1853-0086 1853-0086		TSTR:SI NPN TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP	80 131 80 131 80 131 80 131 80 131	2N3904 2N5087 2N5087 2N5087 2N5087
A102Q40 A102Q41 A102Q42 A102Q43 A102Q44	1853-0086 1853-0086 1853-0086 1853-0086 1853-0086		TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP	80 10 1 80 10 1 80 10 1 80 10 1 80 10 1	2N5087 2N5087 2N5087 2N5087 2N5087
A102Q45 A102Q46 A102Q47 A102Q48 A102Q49	1853-0086 1853-0086 1853-0086 1853-0086 1853-0086		TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP	80 15 1 80 15 1 80 15 1 80 15 1 80 15 1	2N 50 8 7 2N 50 8 7 2N 50 8 7 2N 50 8 7 2N 50 8 7
A102Q50 A102Q51 A102Q52 A102Q53 A102Q53 A102R1	1853-0086 1853-0086 1853-0086 1853-0086 0698-7310	34	TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP TSTR:SI PNP R:FXD FLM 1.65K OHM 0.25% 1/8W	80 12 1 80 12 1 80 12 1 80 12 1 80 12 1 284至0	2N5087 2N5087 2N5087 2N5087 0698-7310

Used on card part no. 5060-8324, rev. 1136 only.
 First used on card rev. 1301.

Table 4-17. A102, A103, A110, A111 Core Stack/Sense Amplifier Card (8K), Replaceable Parts (Continued)

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A102R2 A102R3 A102R4 A102R5 A102R6	0698-3488 0698-7310 0698-3488 0698-7310 0698-7310	68	R:FXO MET FLM 442 OHM 1% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO MET FLM 442 OHM 1% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W	28480 28480 28480 28480 28480	0698-3488 0698-7310 0698-3488 0698-7310 0698-7310
A102R7 A102R8 A102R9 A102R10 A102R11	0698-3488 0698-7310 0698-7310 0698-3488 0698-7310		R:FXD MET FLM 442 OHM 1% 1/8W R:FXD FLM 1.65K OHM 0.25% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO MET FLM 442 OHM 1% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W	28480 28480 28480 28480 28480	0698-3488 0698-7310 0698-7310 0698-3488 0698-7310
A102R12 A102R13 A102R14 A102R15 A102R16	0698-7310 0698-3488 0698-7310 0698-7310 0698-3488		R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO MET FLM 442 OHM 1% 1/8W R:FXD FLM 1.65K OHM 0.25% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXD MET FLM 442 OHM 1% 1/8W	28480 28480 28480 28480 28480	0698-7310 0698-3488 0698-7310 0698-7310 0698-3488
A102R17 A102R18 A102R19 A102R20 A102R21	0698-7310 0698-7310 0698-3488 0698-7310 0698-7310		R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXD FLM 1.65K OHM 0.25% 1/8W R:FXD MET FLM 442 OHM 1% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W	28480 28480 28480 28480 28480	0698-7310 0698-7310 0698-3488 0698-7310 0698-7310
A102R22 A102R23 A102R24 A102R25 A102R26	0698-3488 0698-7310 0698-7310 0698-3430	2 1	R:FXO MET FLM 442 OHM 1% 1/8W R:FXD FLM 1.65K OHM 0.25% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO MET FLM 21.5 OHM 1% 1/8W R:FXD(SELECTEO FROM ONE OF THE FOLLOWING)	28480 28480 28480 28480	0698-3488 0698-7310 0698-7310 0698-3430
	0698-4411 0757-0402 0757-0284 0757-0403 0757-0401		R:FXD FLM 140 OHM 1% 1/8W R:FXO MET FLM 110 OHM 1% 1/8W R:FXD MET FLM 150 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 100 OHM 1% 1/8W	28480 28480 28480 28480 28480	0698-4411 0757-0402 0757-0284 0757-0403 0757-0401
A102R27 A102R28 A102R29 A102R30	0757-0404 0757-0276 0757-0401 0757-0401 0698-3430	2	R:FXD FLM 130 OHM 1% 1/8W R:FXO MET FLM 61.9 OHM 1% 1/8W R:FXD MET FLM 100 OHM 1% 1/8W R:FXO MET FLM 100 OHM 1% 1/8W R:FXO MET FLM 21.5 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0404 0757-0276 0757-0401 0757-0401 0698-3430
A102R31 A102R32	0757-0401 0698-4411 0757-0402 0757-0284	1	R:FXO MET FLM 100 OHM 1% 1/8W R:FXO(SELECTEO FROM ONE OF THE FOLLOWING) R:FXO FLM 140 OHM 1% 1/8W R:FXO MET FLM 110 OHM 1% 1/8W R:FXO MET FLM 150 OHM 1% 1/8W	28480 28480 28480 28480	0757-0401 0698-4411 0757-0402 0757-0284
A102R33 A102R34	0757-0401 0757-0403 0757-0404 0757-0401 0757-0276		R:FXO MET FLM 100 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO FLM 130 OHM 1% 1/8W R:FXO MET FLM 100 OHM 1% 1/8W R:FXO MET FLM 61.9 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0401 0757-0403 0757-0404 0757-0401 0757-0276
A102R35 THRU A102R51		17	R:FXD(SELECTEO FROM ONE OF THE FOLLOWING)		
A102K31	0757-0200 0757-0290 0757-0438		R:FXO MET FLM 5.62K OHM 1% 1/8W R:FXO MET FLM 6.19K OHM 1% 1/8W R:FXO MET FLM 5.11K OHM 1% 1/8W	28480 28480 28480	0757-0200 0757-0290 0757-0438
A102R52 A102R53	0757-0449 0757-0440 0757-0441 0698-7310 0698-7310		R:FXO MET FLM 6.81K OHM 1% 1/8W R:FXO MET FLM 7.50K OHM 1% 1/8W R:FXO MET FLM 8.25K OHM 1% 1/8W R:FXD FLM 1.65K OHM 0.25% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W	28480 28480 28480 28480 28480	0757-0439 0757-0440 0757-0441 0698-7310 0698-7310
A102R54 A102R55 A102R56 A102R56 A102R57 A102R58	0698-3488 0698-7310 0698-7310 0698-3488 0698-7310		R:FXD MET FLM 442 OHM 1% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXD FLM 1.65K OHM 0.25% 1/8W R:FXO MET FLM 442 OHM 1% 1/8W R:FXD FLM 1.65K OHM 0.25% 1/8W	28480 28480 28480 28480 28480	0698-3488 0698-7310 0698-7310 0698-3488 0698-7310
A102R59 A102R60 A102R61 A102R62 A102R63	0698-7310 0698-7310 0698-3488 0698-7310 0698-3488		R:FXD FLM 1.65K OHM 0.25% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO MET FLM 442 OHM 1% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO MET FLM 442 OHM 1% 1/8W	28480 28480 28480 28480 28480	0698-7310 0698-7310 0698-3488 0698-7310 0698-3488
A102R64 A102R65 A102R66 A102R67 A102R68	0698-7310 0698-7310 0698-3488 0698-7310 0698-7310		R:FXD FLM 1.65K OHM 0.25% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO MET FLM 442 OHM 1% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W	28480 28480 28480 28480 28480	0698-7310 0698-7310 0698-3488 0698-7310 0698-7310
A102R69 A102R70 A102R71 A102R72 A102R73	0698-3488 0698-7310 0698-7310 0698-3488 0698-7310		R:FXD MET FLM 442 OHM 1% 1/8W R:FXD FLM 1.65K OHM 0.25% 1/8W R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXD MET FLM 442 OHM 1% 1/8W R:FXD FLM 1.65K OHM 0.25% 1/8W	28480 28480 28480 28480 28480	0698-3488 0698-7310 0698-7310 0698-3488 0698-7310
				-	

Table 4-17. A102, A103, A110, A111 Core Stack/Sense Amplifier Card (8K), Replaceable Parts (Continued)

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number	
A102R74 A102R75 A102R76 A102R77 A102R78	0698-7310 0698-3488 0698-7310 0698-7310 0698-3488		R:FXO FLM 1.65K OHM 0.25% 1/8W R:FXD MET FLM 442 OHM 1% 1/8W R:FXD FLM 1.65K OHM 0.25% 1/8W R:FXD FLM 1.65K OHM 0.25% 1/8W R:FXD MET FLM 442 OHM 1% 1/8W	28480 28480 28480 28480 28480	0698-7310 0698-3488 0698-7310 0698-7310 0698-3488	
A102R79 A102R80 A102R81 A102R82 A102R83	2100-2061 1810-0045 1810-0045 1810-0045 1810-0045	1 5	R:VAR FLM 200 OHM 10% LIN 1/2W RESISTOR PACK:7 RES. 200 OHM 5% 0.15W RESISTOR PACK:7 RES. 200 OHM 5% 0.15W RESISTOR PACK:7 RES. 200 OHM 5% 0.15W RESISTOR PACK:7 RES. 200 OHM 5% 0.15W	28 \$80 28 \$80 28 \$80 28 \$80 28 \$80	2100-2061 1810-0045 1810-0045 1810-0045 1810-0045	
A102R84 A102R85 A102U1 A102U2 A102U3	1810-0045 0698-3132 1858-0001 0960-0111 1858-0001	1 17 17	RESISTOR PACK:7 RES. 200 CHM 5% 0.15W R:FXO FLM 261 OHM 1% 1/8W TSTR ARRAY:OUAL DIFF AMPL W/CONST CUR BALUN MOOULE TSTR ARRAY:OUAL OIFF AMPL W/CONST CUR	28480 28480 02735 28480 02735	1810-0045 0698-3132 80381 0960-0111 80381	
A102U4 A102U5 A102U6 A102U7 A102U8	0960-0111 1858-0001 0960-0111 1858-0001 0960-0111		BALUN MOOULE TSTR ARRAY:DUAL DIFF AMPL W/CONST CUR BALUN MOOULE TSTR ARRAY:OUAL OIFF AMPL W/CONST CUR BALUN MOOULE	28 \$ 80 02135 28 \$ 80 02135 28 \$ 80	0960-0111 80381 0960-0111 80381 0960-0111	
A102U9 A102U10 A102U11 A102U12 A102U13	1858~0001 0960-0111 1858-0001 0960-0111 1858-0001		TSTR ARRAY:OUAL OIFF AMPL W/CONST CUR BALUN MOOULE TSTR ARRAY:OUAL OIFF AMPL W/CONST CUR BALUN MOOULE TSTR ARRAY:OUAL OIFF AMPL W/CONST CUR	02735 28480 02735 28480 02735	80381 0960-0111 80381 0960-0111 80381	
A102U14 A102U15 A102U16 A102U17 A102U18	0960-0111 1858-0001 0960-0111 1820-0956 0960-0111	1	BALUN MOOULE TSTR ARRAY:OUAL OIFF AMPL W/CONST CUR BALUN MOOULE IC:CTL OUAL 2-INPT ANO BUFFER BALUN MOOULE	28 \$ 80 027 35 28 \$ 80 07263 28 \$ 80	0960-0111 80381 0960-0111 U6A995679X 0960-0111	
A102U19 A102U20 A102U21 A102U22 A102U23	1858-0001 C960-0111 1858-0001 C960-0111 1858-0001		TSTR ARRAY:OUAL OIFF AMPL W/CONST CUR BALUN MOOULE TSTR ARRAY:DUAL OIFF AMPL W/CONST CUR BALUN MOOULE TSTR ARRAY:OUAL OIFF AMPL W/CONST CUR	02135 28480 02135 23480 02135	80381 0960-0111 80381 0960-0111 80381	
A 102U24 A 102U25 A 102U26 A 102U27 A 102U28	C960-0111 1858-0001 C960-0111 1858-0001 C960-0111		BALUN MOOULE TSTR ARRAY:OUAL OIFF AMPL W/CONST CUR BALUN MOOULE TSTR ARRAY:OUAL OIFF AMPL W/CONST CUR BALUN MOOULE	28 80 027 35 28 80 027 35 28 80	0960-0111 80381 0960-0111 80381 0960-0111	
A102U29 A102U30 A102U31 A102U32 A102U33	1858-0001 0960-0111 1858-0001 0960-0111 1858-0001		TSTR ARRAY:OUAL OIFF AMPL W/CONST CUR BALUN MOOULE TSTR ARRAY:OUAL OIFF AMPL W/CONST CUR BALUN MOOULE TSTR ARRAY:OUAL OIFF AMPL W/CONST CUR	02735 28480 02735 28480 02735	80381 0960-0111 80381 0960-0111 80381	
A102U34 A102U35 A102U36 THRU A102U51	0960-0111 1858-0001 5087-1013	16	BALUN MOOULE TSTR ARRAY:OUAL OIFF AMPL W/CONST CUR OIOOE MOOULE	28 80 02 35 28 80	0960-0111 80381 5087-1013	
A102W1 A103 A110 A111	8159-0005	1	JUMPER WIRE SAME AS A102, USE PREFIX A103 SAME AS A102, USE PREFIX A110 SAME AS A102, USE PREFIX A111	28480	8159-0005	

REF.		BACKPLANE	LOCATION	* 1	INDICATES	SIGNAL	SOURCE
A102 (A105-268					
95 96	A102-25 A102-27	A105-26# A105-19#					
97	A102-29	A105-25#					
98	A102-31	A105-24#					
99	A102-33	A105-53*					
100	A102-35	A105-60#					
101	A102-37	A105-59*					
102	A102-41	A105-58#					
103	A102-43	A105-52*					
104	A102-45	A105-44#					
105 106	A102-49	A105-51#					
107	A102-51 A102-53	A105-45# A105-76#					
108	A102-55	A105-73#					
109	A102-57	A105-74#					
110	A102-59	A105-75#					
111	A102-61	A105-17#					
112	A102-26	A105-20#					
113	A102-28	A105-23#					
114	A102-30	A105-22*					
115	A102-32	A105-21*					
116	A102-34	A105-57#					
117	A102-36	A105-54*					
118	A102-38	A105-56*					
119 120	A102-42 A102-44	A105-55* A105-78*					
121	A102-46	A105-79#					
122	A102-50	A105-81#					
123	A102-52	A105-80#					
124	A102-54	A105-84#					
125	A102-56	A105-77#					
126	A102-58	A105-83#					
127	A102-60	A105-82#					
128	A102-62	A105-18#					
262	A102-3	A107-55#					
263 272	A102-4 A102-5*	A107-56* A103-5*	A 1 / 4 7 - 0 / 4	1110-55	A111-58		
290	A102-5-	A103-5	A107-80 A107-83*	All0-5# All0-6	Alll-5* Alll-6		
378	A102-15#	A103-15*	A107-13	A110-15*		#	
379	A102-18*	A103-18#	A107-11	A110-18#			
380	A102-17#	A103-17#	A107-7	A110-17#			
381	A102-20#	A103-20#	A107-9	A110-20#			
382	A102-19#	A103-19#	A107-17	A110-19#			
383	A102-22#	A103-22#	A107-15	A110-22#			
384	A102-21*	A103-21#	A107-19	A110-21*			
385	A102-63#	A103-63#	A107-21	A110-63#			
386 387	A102-64* A102-65*	A103-64* A103-65*	A107-31 A107-33	All0-64* All0-65*			
388	A102-66#	A103-66*	A107-35	A110-66*			
389	A102-67#	A103-67#	A107-37	A110-67#			
390	A102-68#	A103-68#	A107-41	A110-68#			
391	A102-69#	A103-69#	A107-43	A110-69#			
392	A102-70#	A103-70*	A107-45	A110-70#			
393	A102-71#	A103-71#	A107-49	A110-71#			
394	A102-72*	A103-72#	A107-71	A110-72#	A111-72	*	

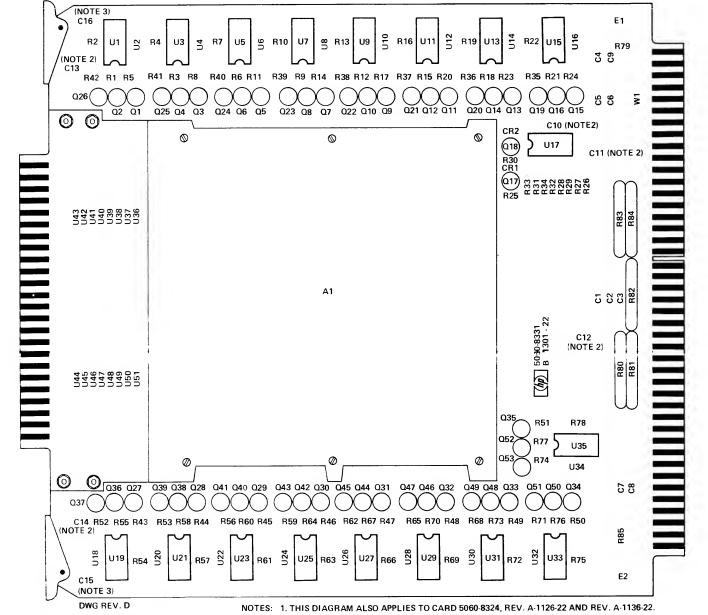
CAUTION

RETURN THIS CIRCUIT CARD TO THE FACTORY FOR REPAIR. FIELD REPLACEMENT OF ANY COMPONENT WILL VOID THE WARRANTY ON THE CARD.

TO AVOID BREAKING WIRES IN CORE STACK A1, DO NOT PRESS ON THE TOP OR BOTTOM OF THE STACK.

NOTES:

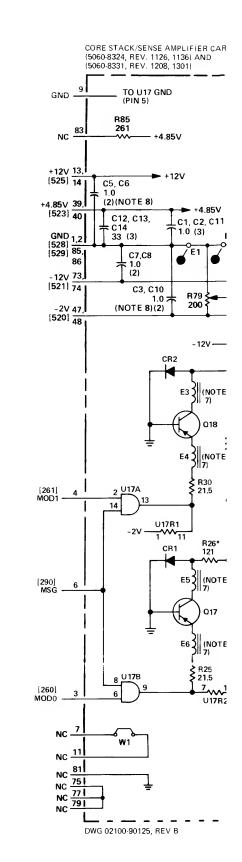
- THIS CARD MUST NOT BE REPAIRED IN THE FIELD FIELD REMOVAL OR REPLACEMENT OF ANY COMPONENT VOIDS THE WARRANTY ON THE CARD
- 2 RESISTANCE VALUES ARE IN OHMS AND CAPACI TANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED
- 3 ALL PIN NUMBERS REFER TO 86 PIN CONNECTOR UNLESS OTHERWISE INDICATED
- 4 NUMERALS WITHIN BRACKETS ARE WIRING LIST REFERENCE NUMBERS
- 5 DIODES ARE MOUNTED WITH CATHODE END AWAY FROM CARD
- 6 * INDICATES SELECTED RESISTOR R26, R32 ARE SELECTED FROM 100, 110, 121, 130, 140, OR 150 R35 THRU R51 ARE SELECTED FROM 5 11K, 5 62K, 6 19K 6 81K 7 50K OR 8.25K.
- 7. E3 THRU E6 USED ONLY ON CARD 5060 8324, REV. 1136.
- 8. CAPACITORS C10, C11, C12, C13, AND C14 NOT USED ON CARD 5060-8324.
- 9 R79 IS NOT USED ON ALL CARDS: WHEN R79 IS NOT USED. VTH IS CONNECTED TO 2V AS SHOWN BY DOTTED LINE.
- C15 AND C16 FIRST USED ON CARD REV. 1301.

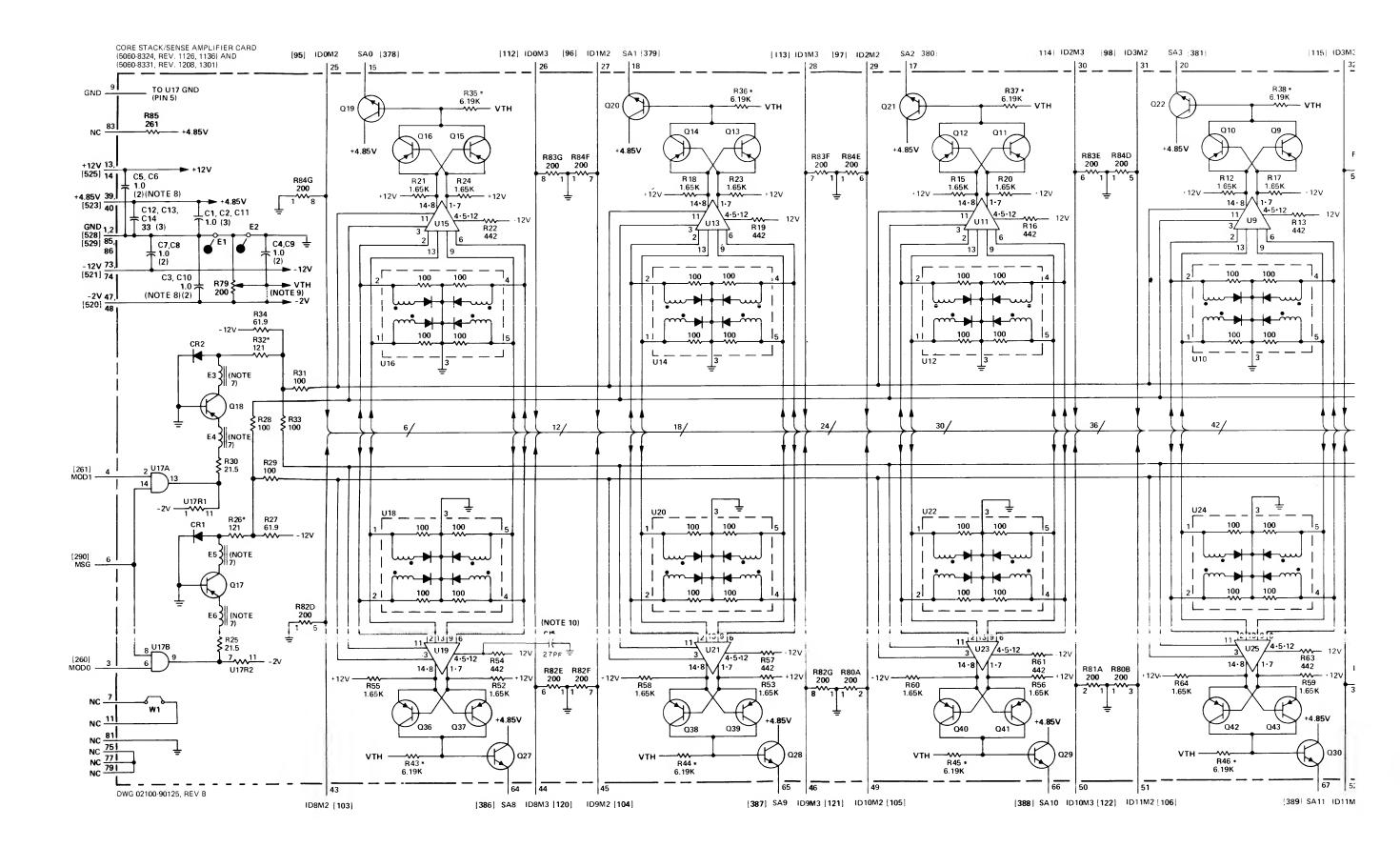


See table 4-17 for replaceable parts.

2. CAPACITORS C10, C11, C12, C13, AND C14 NOT USED ON CARD 5060-8324.

3. C15 AND C16 FIRST USED ON CARD 5060-8331, REV. A-1301-22.





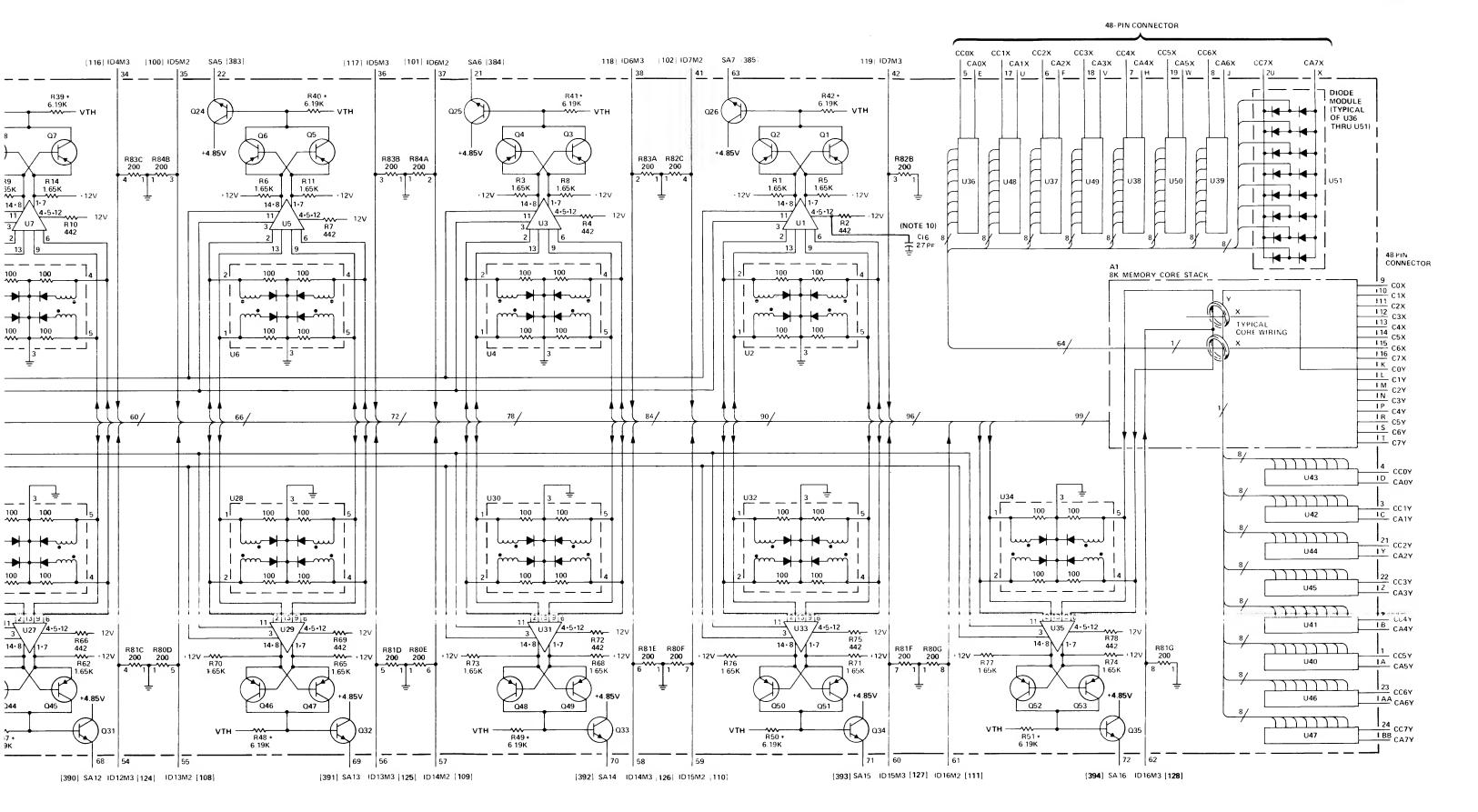


Figure 4-18. A102 Core Stack/Sense Amplifier Card (8K), Parts Location and Schematic Diagrams

2100A

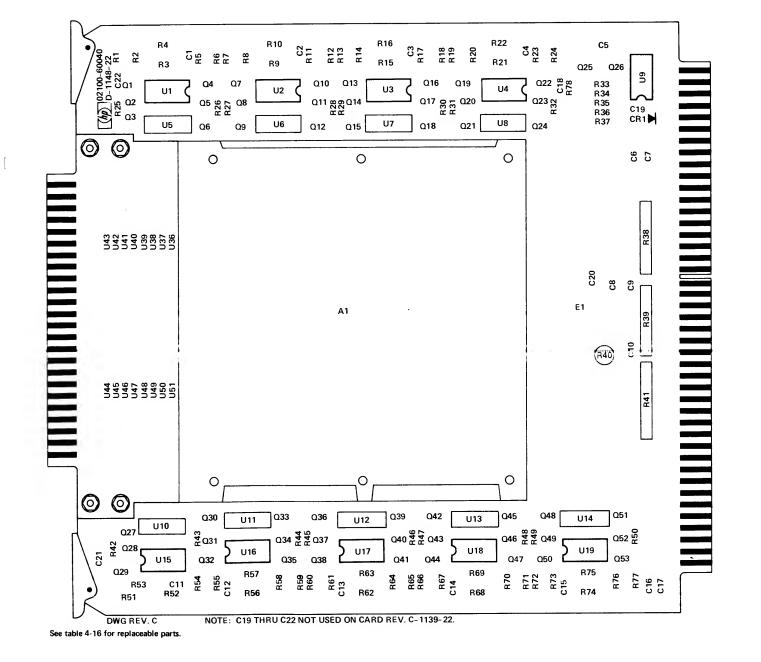
CAUTION

RETURN THIS CIRCUIT CARD TO THE FACTORY FOR REPAIR. FIELD REPLACEMENT OF ANY COMPONENT WILL VOID THE WARRANTY ON THE CARD.

TO AVOID BREAKING WIRES IN CORE STACK A1, DO NOT PRESS ON THE TOP OR BOTTOM OF THE STACK.

NOTES:

- THIS CARD MUST NOT BE REPAIRED IN THE FIELD, FIELD REMOVAL OR REPLACEMENT OF ANY COMPONENT VOIDS THE WARRANTY ON THE CARD.
- RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.
- INDICATES PIN NUMBERS OF 48-PIN CONNECTOR. ALL OTHER PIN NUMBERS ARE FOR 86-PIN CONNECTOR.
- 4. NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.
- 5. EACH FERRITE CORE SHOWN REPRESENTS 4,096 CORES.
- † INDICATES SELECTED RESISTOR. R2, R5, AND R8 SELECTED FROM 5.11K, 5.62K, 6.19K, 6.81K, 7.50K, OR 8.25K. R11, R14, R17, R20, R23, R53, R55, R58, R61, R64, R67, R70, R73, R76 SELECTED FROM 5.62K OR 6.19K. NORMAL VALUES SHOWN.
- 7. C19 THRU C22 NOT USED ON CARD REV. 1139.



CORE STACK SENSE AMPLIFIER CARD (02100-60040, REV. 1139, 1148) CCOY COY C1Y C2Y M* ci C3Y N* C4Y C5Y C6Y S* C7Y COX C1X 10* C2X 11* C3X 12* C4X 13* C5X 14* C6X 15* C7X 16* 14 [525] C6,C7 40 C8,C9 GND -2V [520] -48 -12V 73 74 [521] C16,C17 DWG REV. B (SHEET 1 OF 3)

CCO.

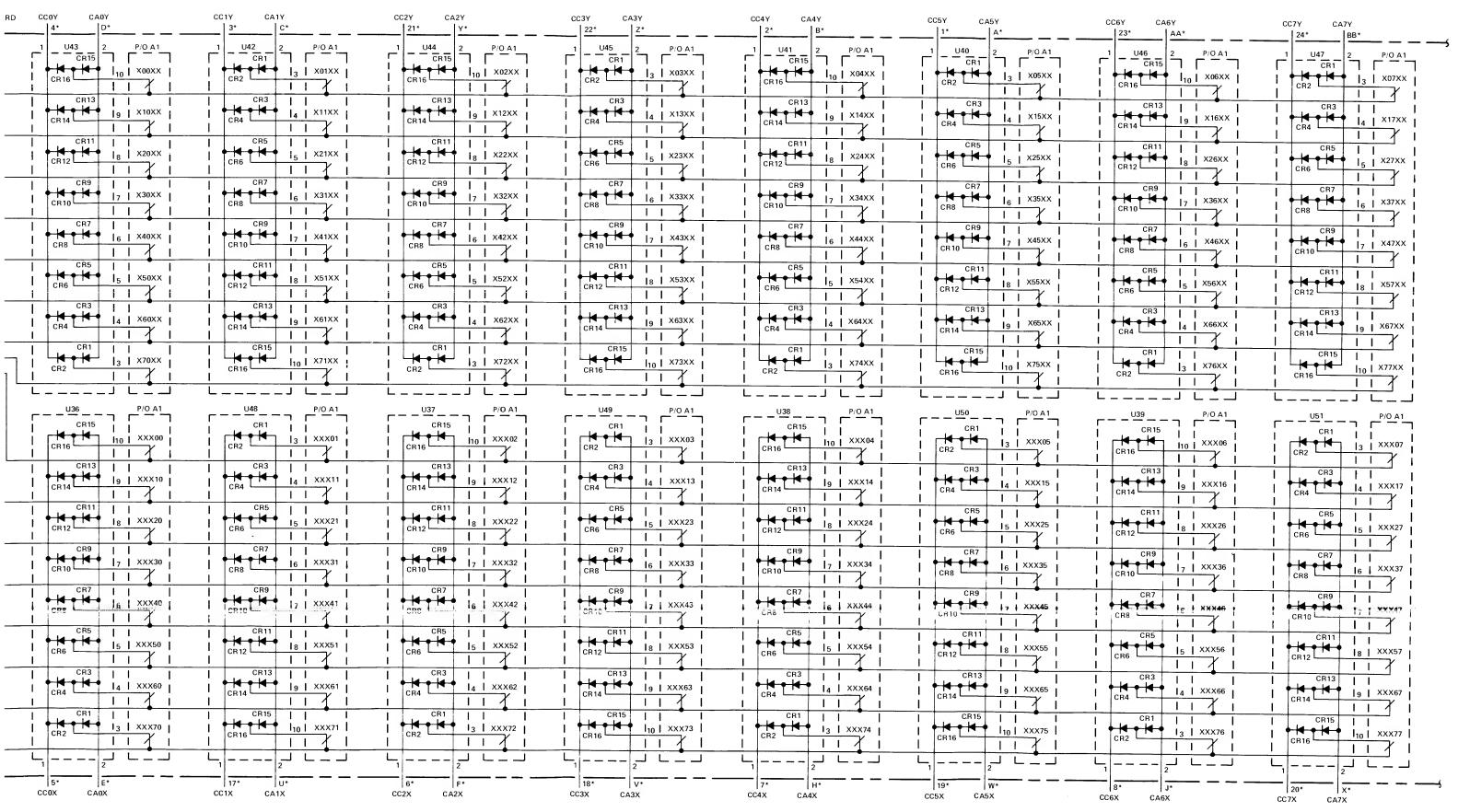


Figure 4-19. A103 Core Stack/Sense Amplifier Card (4K), Parts Location and Schematic Diagrams (Sheet 1 of 3)

REF.

A103(4K)

A103-25

A103-27

A103-29

A103-31

A103-33

A103-35

A103-37

A103-41

A103-43

A102-15*

A102-18#

NO.

62

63

65

67

378

380

381

382

383

384

BACKPLANE LOCATION

A105-10#

A105-7* A105-8*

A105-9#

A105-37#

A105-32*

A105-33#

A105-34*

A105-31*

A103-15*

A102-17* A103-17* A107-7

A102-20* A103-20* A107-9

A102-19# A103-19# A107-17

A102-22* A103-22* A107-15

A102-21* A103-21* A107-19

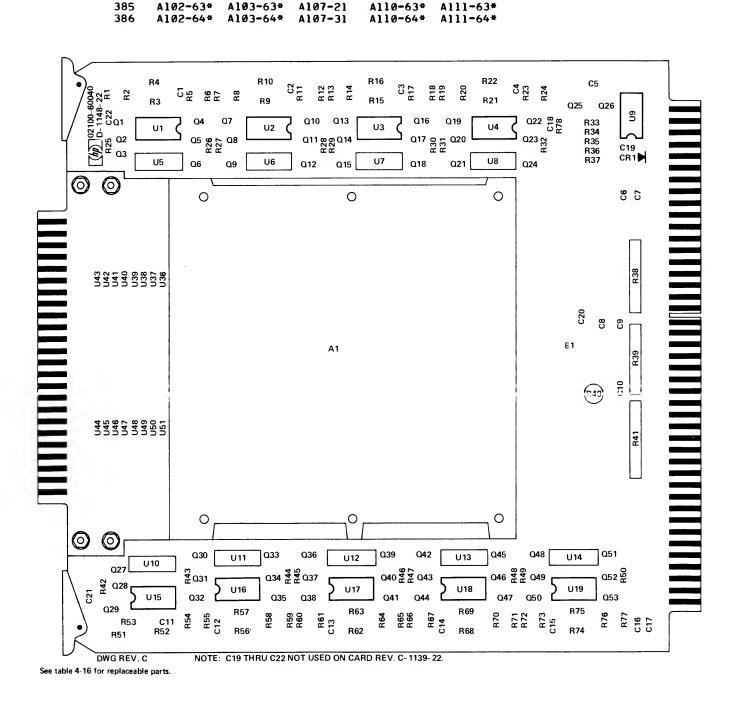
A103-18* A107-11

A107-13

CAUTION

RETURN THIS CIRCUIT CARD TO THE FACTORY FOR REPAIR. FIELD REPLACEMENT OF ANY COMPONENT WILL VOID THE WARRANTY ON THE CARD.

TO AVOID BREAKING WIRES IN CORE STACK A1, DO NOT PRESS ON THE TOP OR BOTTOM OF THE STACK.



* INDICATES SIGNAL SOURCE

All0-15* All1-15*

All0-18# All1-18#

Al10-17# Al11-17#

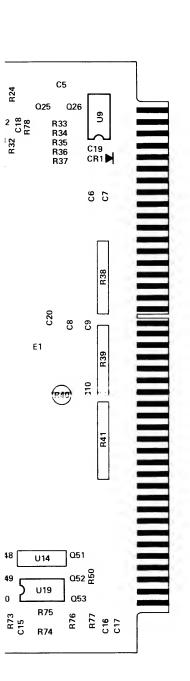
Al10-20# Al11-20#

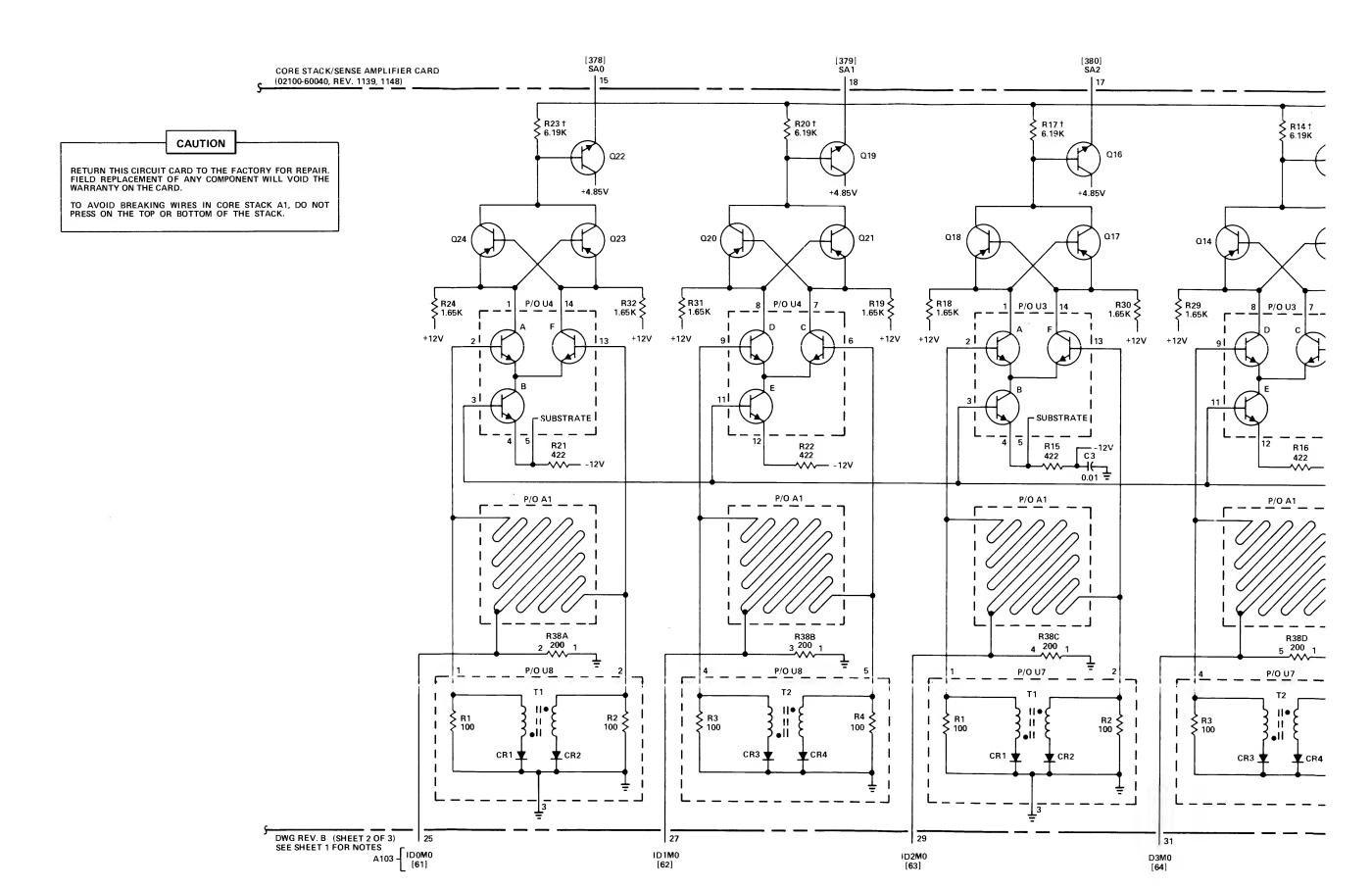
All0-19# All1-19#

All0-22* All1-22*

A110-21# A111-21#

DWG REV. B (SHEET 2 OF 3) SEE SHEET 1 FOR NOTES A103 -





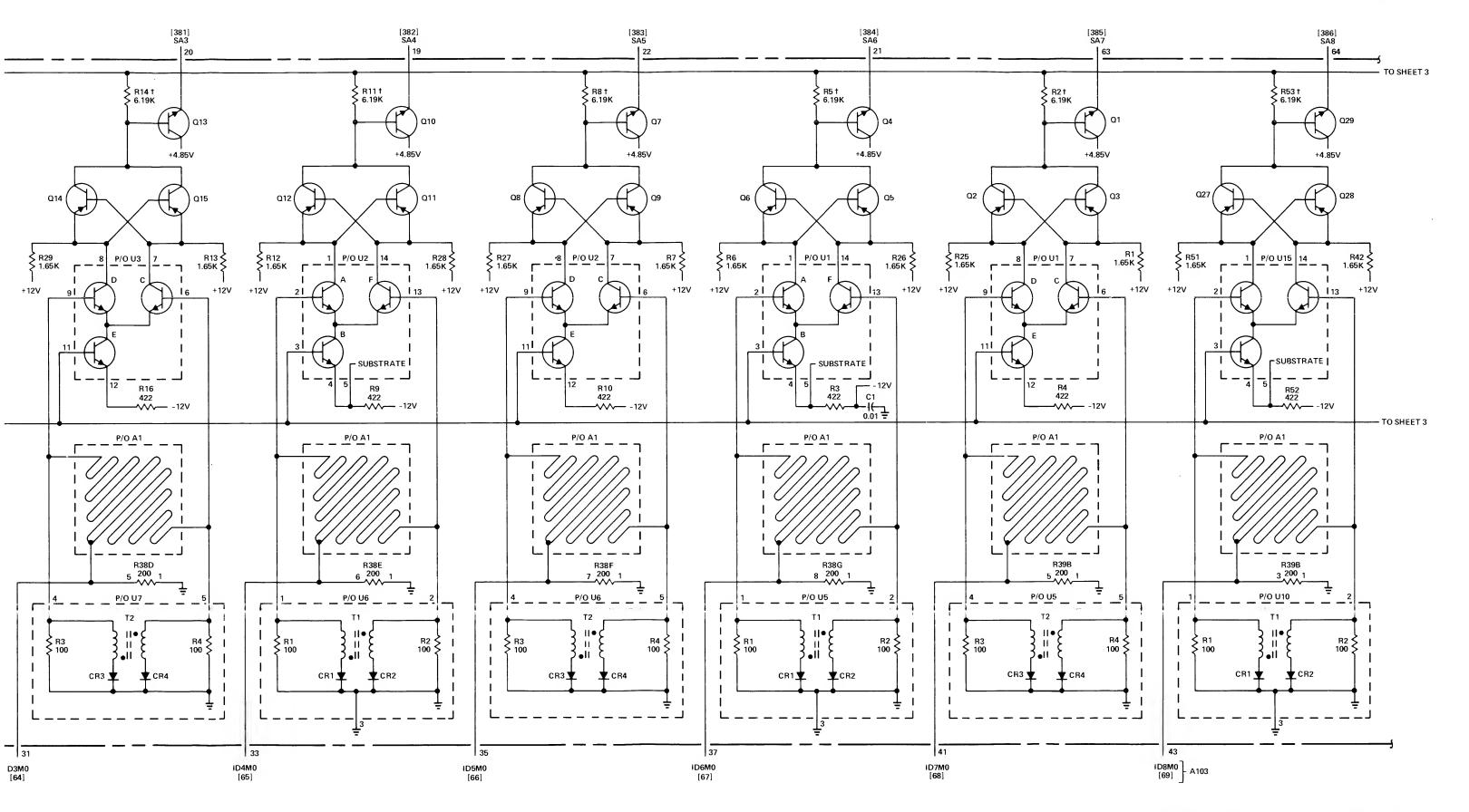


Figure 4-19. A103 Core Stack/Sense Amplifier Card (4K), Parts Location and Schematic Diagrams (Sheet 2 of 3)

CORE STACK/SENSE AMPLIFIER (02100-60040, REV. 1139, 1148)

FROM SHEET

CAUTION

RETURN THIS CIRCUIT CARD TO THE FACTORY FOR REPAIR. FIELD REPLACEMENT OF ANY COMPONENT WILL VOID THE WARRANTY ON THE CARD.

TO AVOID BREAKING WIRES IN CORE STACK A1, DO NOT PRESS ON THE TOP OR BOTTOM OF THE STACK.

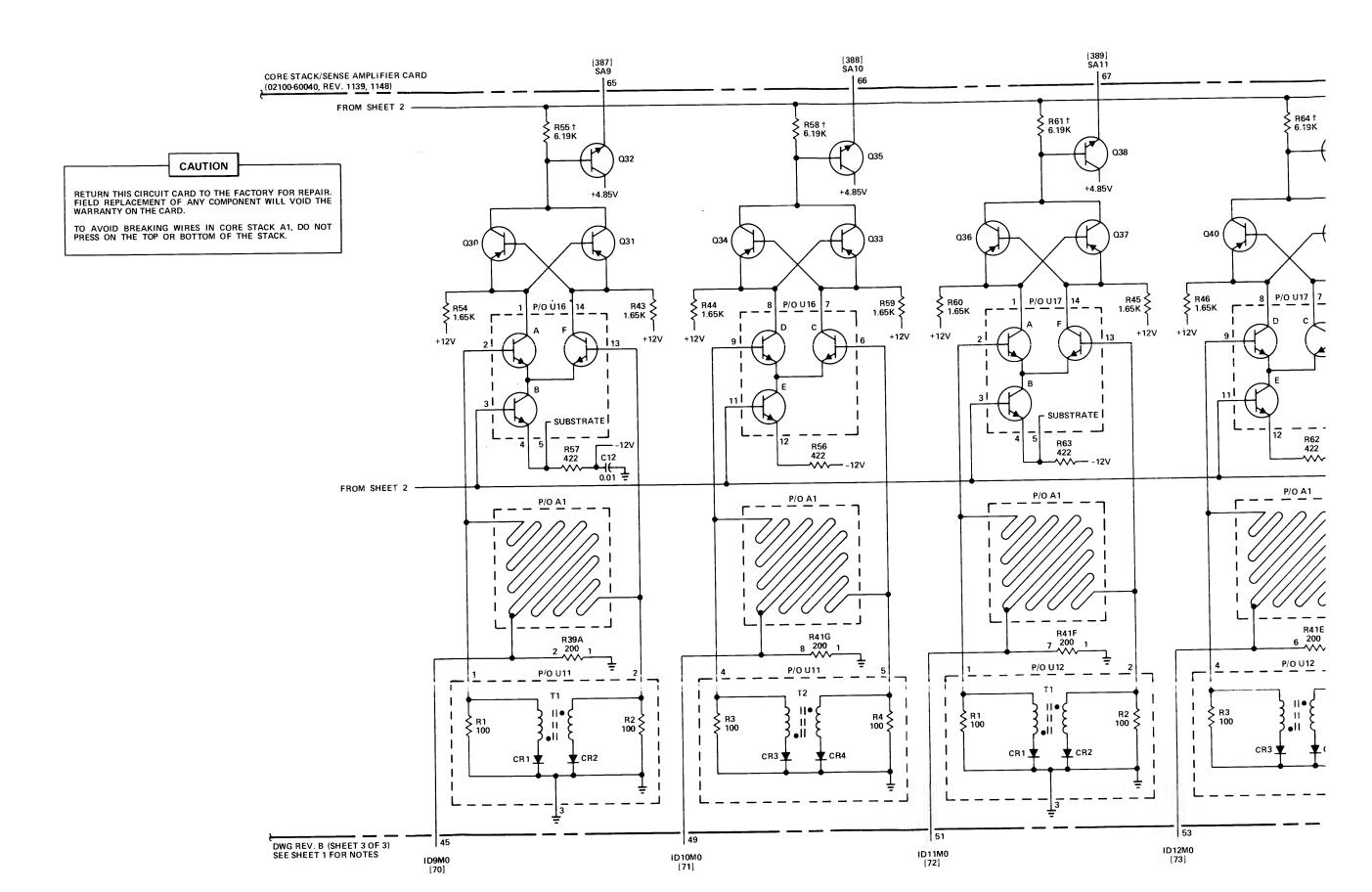
FROM SHEET 2

DWG REV. B (SHEET 3 OF 3) SEE SHEET 1 FOR NOTES

C5 Q25 R33 R34 R35 R36 R37 C19 CR1 ▶ c6 C7 C20 ස ද Q48 U14 Q51

U19

SOURCE



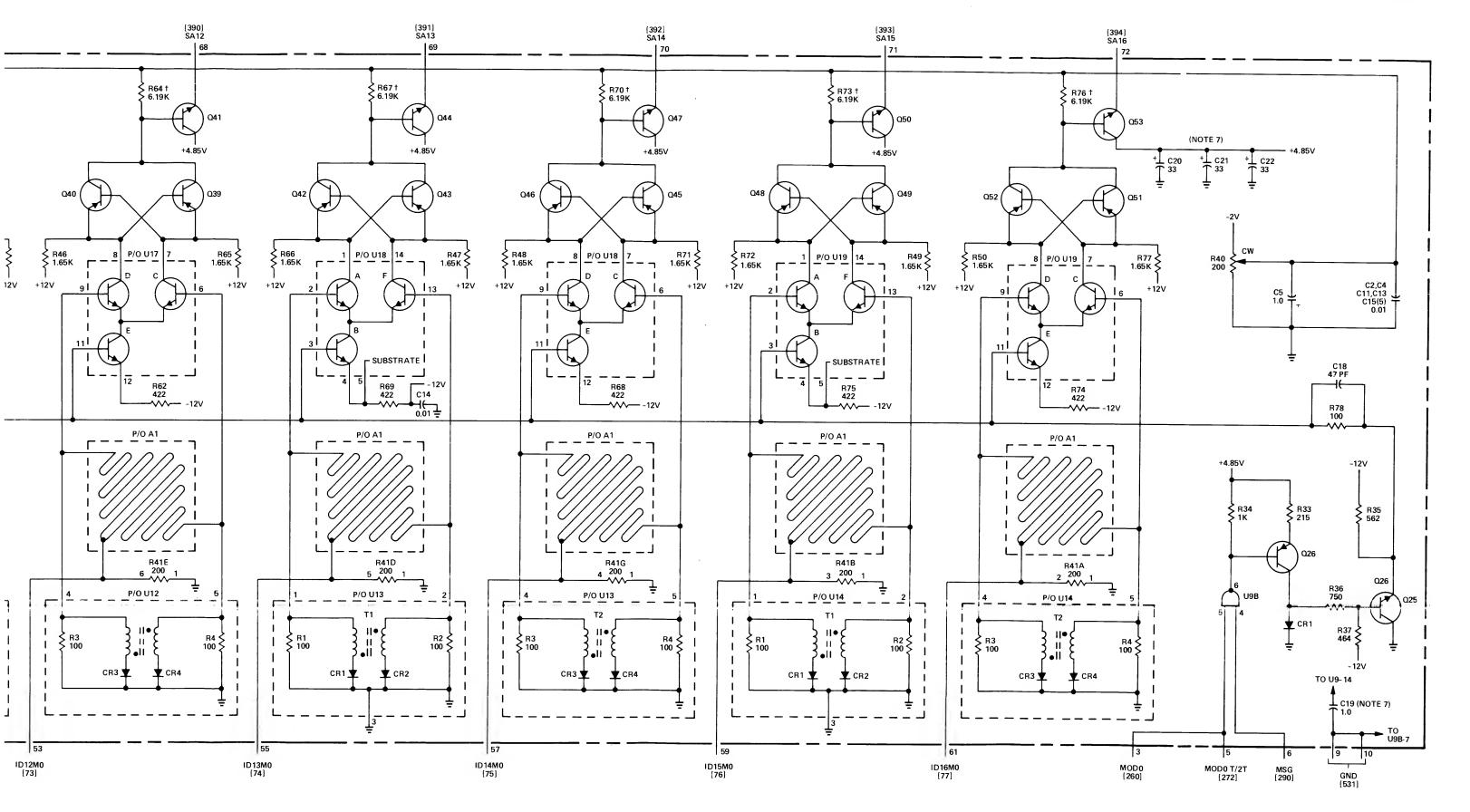


Figure 4-19. A103 Core Stack/Sense Amplifier Card (4K), Parts Location and Schematic Diagrams (Sheet 3 of 3)

2100A Section IV

(Information continues on next page)

REF.				*	INDICATE	S SIGNAL	SOURCE
NO.		BACKPLANE	LOCATION				
A103 ((8K)						
61	A103-25	A105-10*					
62	A103-27	A105-7*					
63	A103-29	A105-8*					
64	A103-31	A105-9*					
65	A103-33	A105-37#					
66	A103-35	A105-32*					
67	A103-37	A105-33*					
68	A103-41	A105-34*					
69	A103-43	A105-31*					
70	A103-45	A105-46*					
71	A103-49	A105-49#					
72	A103-51	A105-50#					
73	A103-53	A105-61*					
74	A103-55	A105-69*					
75	A103-57	A105-70*					
76	A103-59	A105-71*					
77	A103-61	A105-15*					
78	A103-26	A105-14#					
79	A103-28	A105-11*					
80	A103-30	A105-12*					
81	A103-32	A105-13*					
82 83	A103-34	A105-38*					
84	A103-36 A103-38	A105-43#					
85	A103-36 A103-42	A105-41* A105-42*					
86	A103-42 A103-44	A105-42*					
87	A103-46	A105-72-					
88	A103-50	A105-66*					
89	A103-52	A105-67*					
90	A103-54	A105-65*					
91	A103-56	A105-62*					
92 92	A103-58	A105-63*					
93	A103-60	A105-64*					
94	A103-62	A105-16*					
260	A103-3	A107-68*					
261	A103-4	A107-63#					
272	A102-5*	A103-5*	A107-80	A110-5#	A111-	5#	
290	A102-6	A103-6	A107-83*	A110-6	A111-		
378	A102-15*	A103-15*	A107-13	A110-15			
379	A102-18*	A103-18*	A107-11	A110-18			
380	A102-17#	A103-17#	A107-7	A110-17			
381	A102-20*	A103-20*	A107-9	A110-20			
382	A102-19#	A103-19#	A107-17	A110-19			
383	A102-22*	A103-22*	A107-15	A110-22		22*	
384	A102-21#	A103-21*	A107-19	A110-21			
385	A102-63*	A103-63*	A107-21	A110-63	* Alll-	63*	
386	A102-64#	A103-64*	A107-31	A110-64			
387	A102-65*	A103-65*	A107-33	A110-65	* Alll-	65#	
388	A102-66*	A103-66*	A107-35	A110-66	* Alll-	56 *	
389	A102-67*	A103-67#	A107-37	A110-67	* Alll-6	57*	
390	A102-68*	A103-68*	A107-41	A110-68	* Alll-0	58 *	
391	A102-69#	A103-69*	A107-43	A110-69			
392	A102-70*	A103-70*	A107-45	A110-70	* Alll-1	70*	
393	A102-71*	A103-71#	A107-49	A110-71			
394	A102-72*	A103-72*	A107-71	A110-72	* Alll-	72 *	

2100A

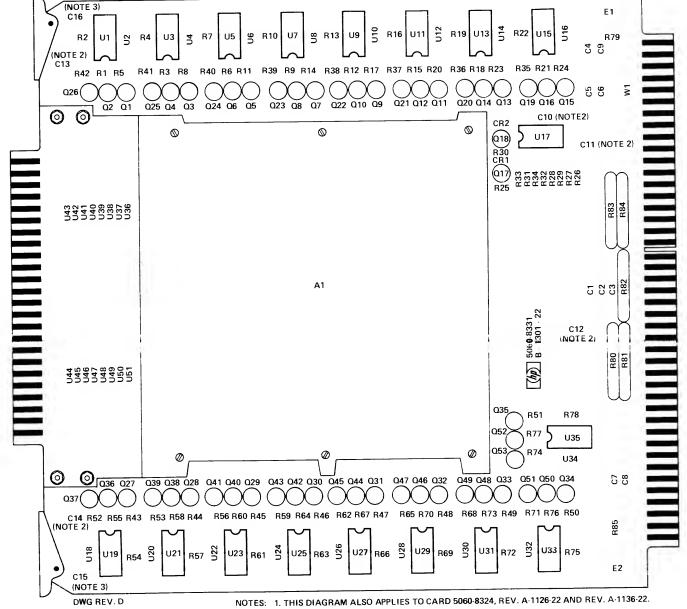
CAUTION

RETURN THIS CIRCUIT CARD TO THE FACTORY FOR REPAIR. FIELD REPLACEMENT OF ANY COMPONENT WILL VOID THE WARRANTY ON THE CARD.

TO AVOID BREAKING WIRES IN CORE STACK A1, DO NOT PRESS ON THE TOP OR BOTTOM OF THE STACK.

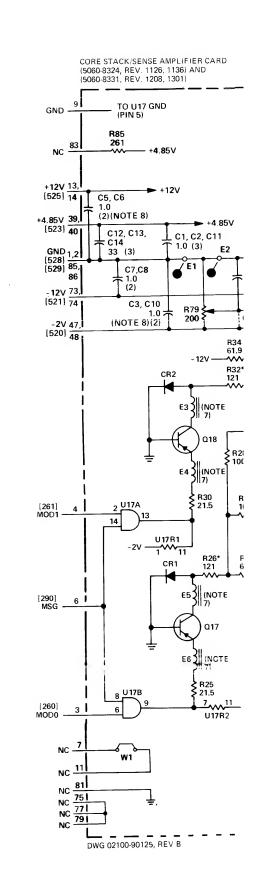
NOTES:

- THIS CARD MUST NOT BE REPAIRED IN THE FIELD
 FIELD REMOVAL OR REPLACEMENT OF ANY COM
 PONENT VOIDS THE WARRANTY ON THE CARD
- 2 RESISTANCE VALUES ARE IN OHMS AND CAPACI TANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED
- 3 ALL PIN NUMBERS REFER TO 86 PIN CONNECTOR UNLESS OTHERWISE INDICATED
- NUMERALS WITHIN BRACKETS ARE WIRING LIST REFERENCE NUMBERS
- 5 DIODES ARE MOUNTED WITH CATHODE END AWAY
- 5 INDICATES SELECTED RESISTOR R26, R32 ARE SELECTED FROM 100, 110 121 130 140, OR 150 R35 THRU R51 ARE SELECTED FROM 5 11K, 5 62K, 6 19K, 6 31K, 7 50K OR 8.25K.
- 7. E3 THRU E6 USED ONLY ON CARD 5060 8324, REV. 1136.
- CAPACITORS C10, C11, C12, C13, AND C14 NOT USED ON CARD 5060-8324.
- 9 R79 IS NOT USED ON ALL CARDS: WHEN R79 IS NOT USED. VTH IS CONNECTED TO 2V AS SHOWN BY DOTTED LINE.
- C15 AND C16 FIRST USED ON CARD REV. 1301.



See table 4-17 for replaceable parts.

- 2. CAPACITORS C10, C11, C12, C13, AND C14 NOT USED ON CARD 5060-8324.
- 3. C15 AND C16 FIRST USED ON CARD 5060-8331, REV. A-1301-22.



NOTES:

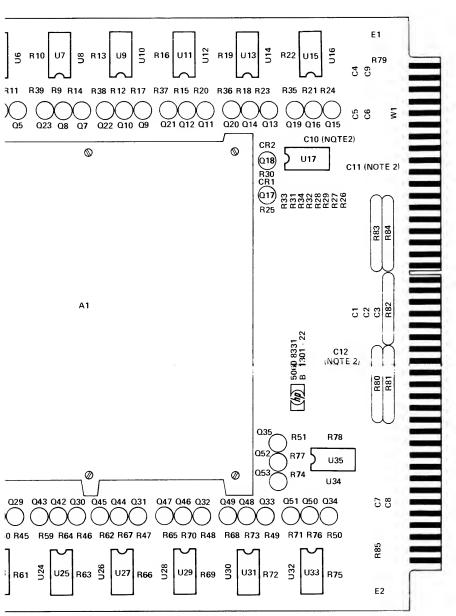
RY FOR REPAIR.

WILL VOID THE

CK A1, DQ NQT TACK.

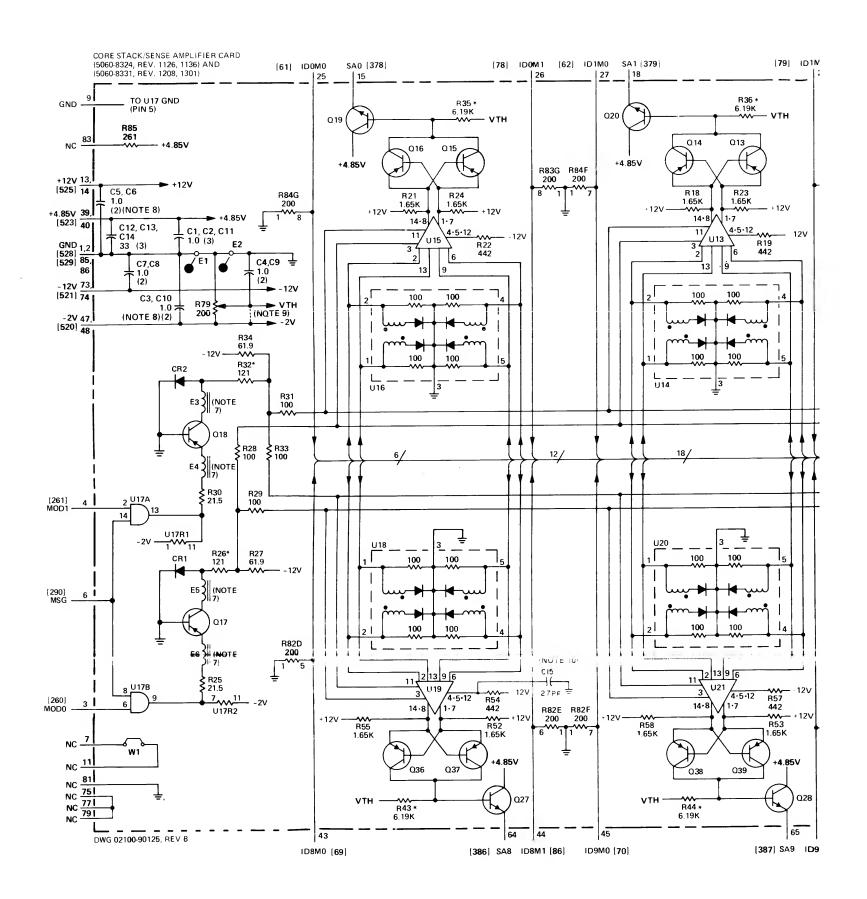
1 THIS CARD MUST NOT BE REPAIRED IN THE FIELD
FIELD REMOVAL OR REPLACEMENT OF ANY COM
PONENT VOIDS THE WARRANTY ON THE CARD

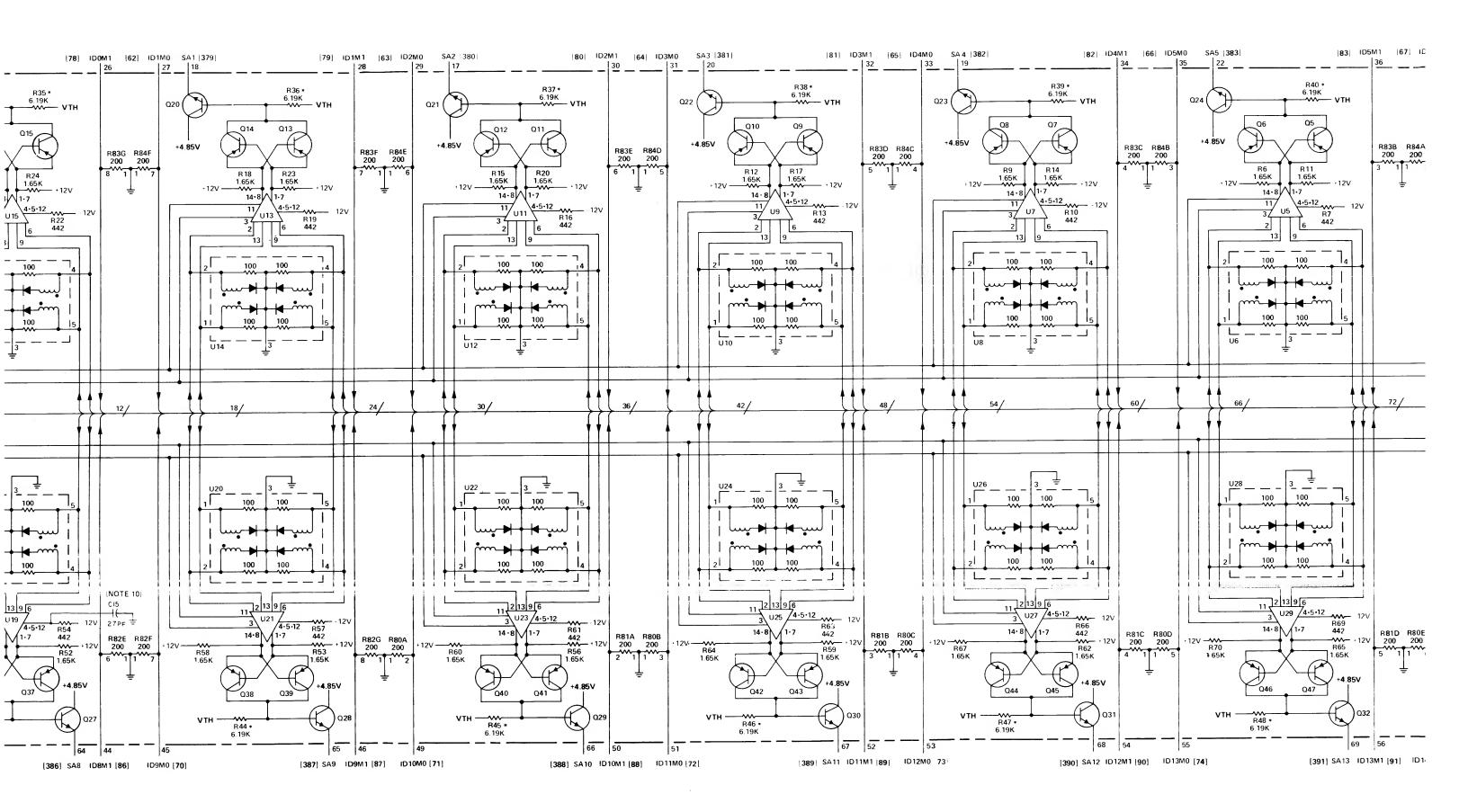
- 2 RESISTANCE VALUES ARE IN OHMS AND CAPACI TANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED
- 3 ALL PIN NUMBERS REFER TO 86 PIN CONNECTOR UNLESS OTHERWISE INDICATED
- 4 NUMERALS WITHIN BRACKETS ARE WIRING LIST REFERENCE NUMBERS
- 5 DIODES ARE MOUNTED WITH CATHODE END AWAY FROM CARD
- INDICATES SELECTED RESISTOR R26, R32 ARE SELECTED FROM 100, 110, 121, 130, 140, OR 150 R35 THRU R51 ARE SELECTED FROM 5 11K, 5 62K, 6 19K, 6 81K, 7 50K QR 8.25K.
- 7. E3 THRU E6 USED ONLY ON CARD 5060 8324, REV. 1136
- 8 CAPACITORS C10, C11, C12, C13, AND C14 NQT USED ON CARD 5060-8324.
- 9. R79 IS NOT USED ON ALL CARDS: WHEN R79 IS NOT USED, VTH IS CONNECTED TO 2V AS SHOWN BY DOTTED LINE.
- 10. C15 AND C16 FIRST USED ON CARD REV. 1301.



OTES: 1. THIS DIAGRAM ALSO APPLIES TO CARD 5060-8324, REV. A-1126-22 AND REV. A-1136-22.

- 2. CAPACITORS C10, C11, C12, C13, AND C14 NOT USED QN CARD 5060-8324.
- 3. C15 AND C16 FIRST USED QN CARD 5060-8331, REV. A-1301-22.





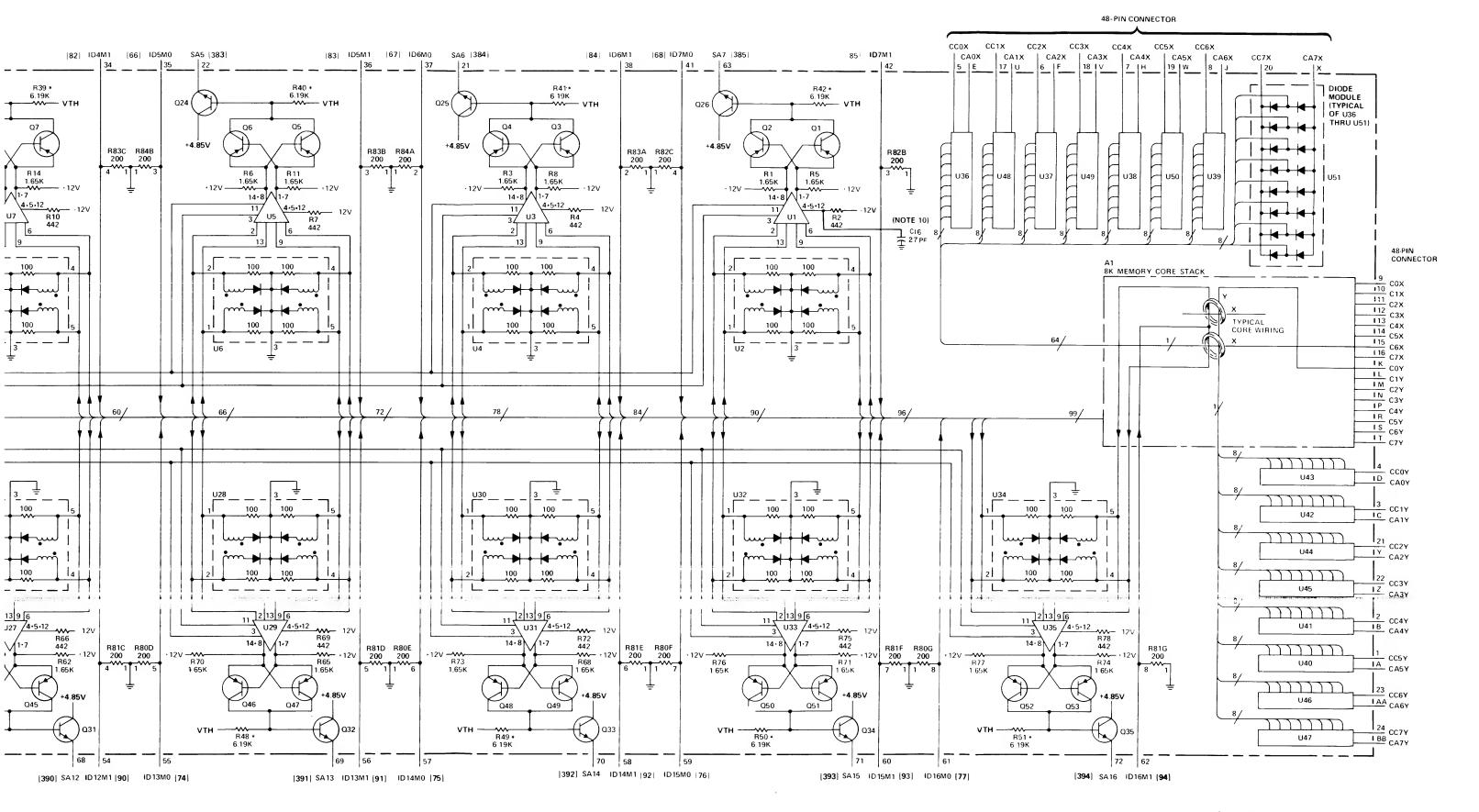
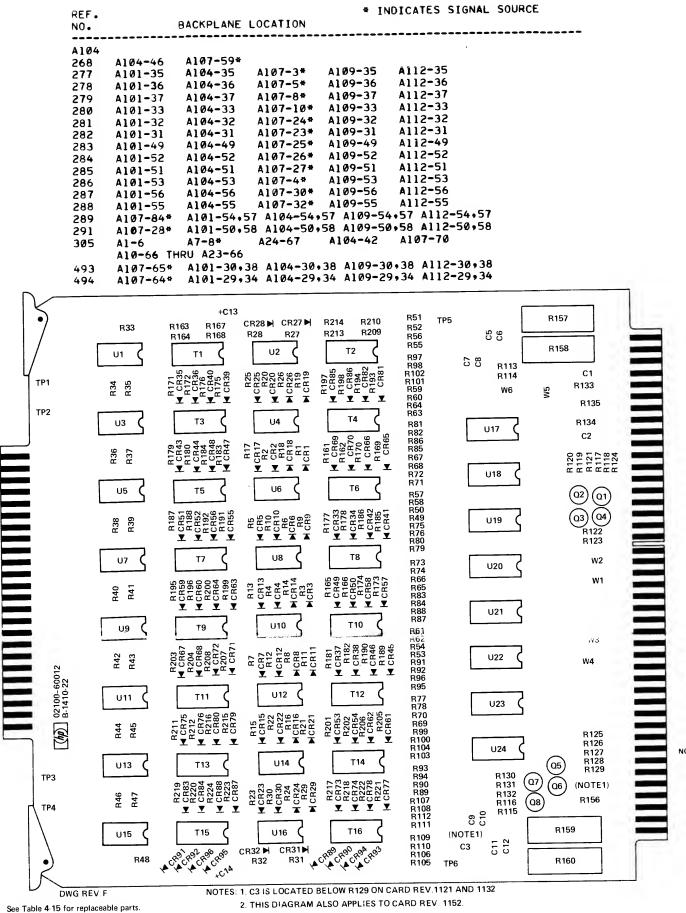
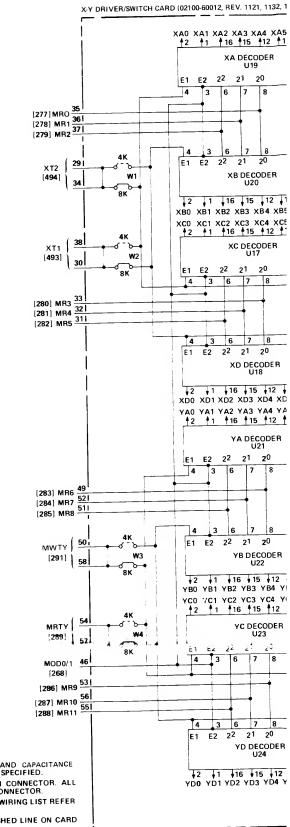


Figure 4-20. A103 Core Stack/Sense Amplifier Card (8K), Parts Location and Schematic Diagrams



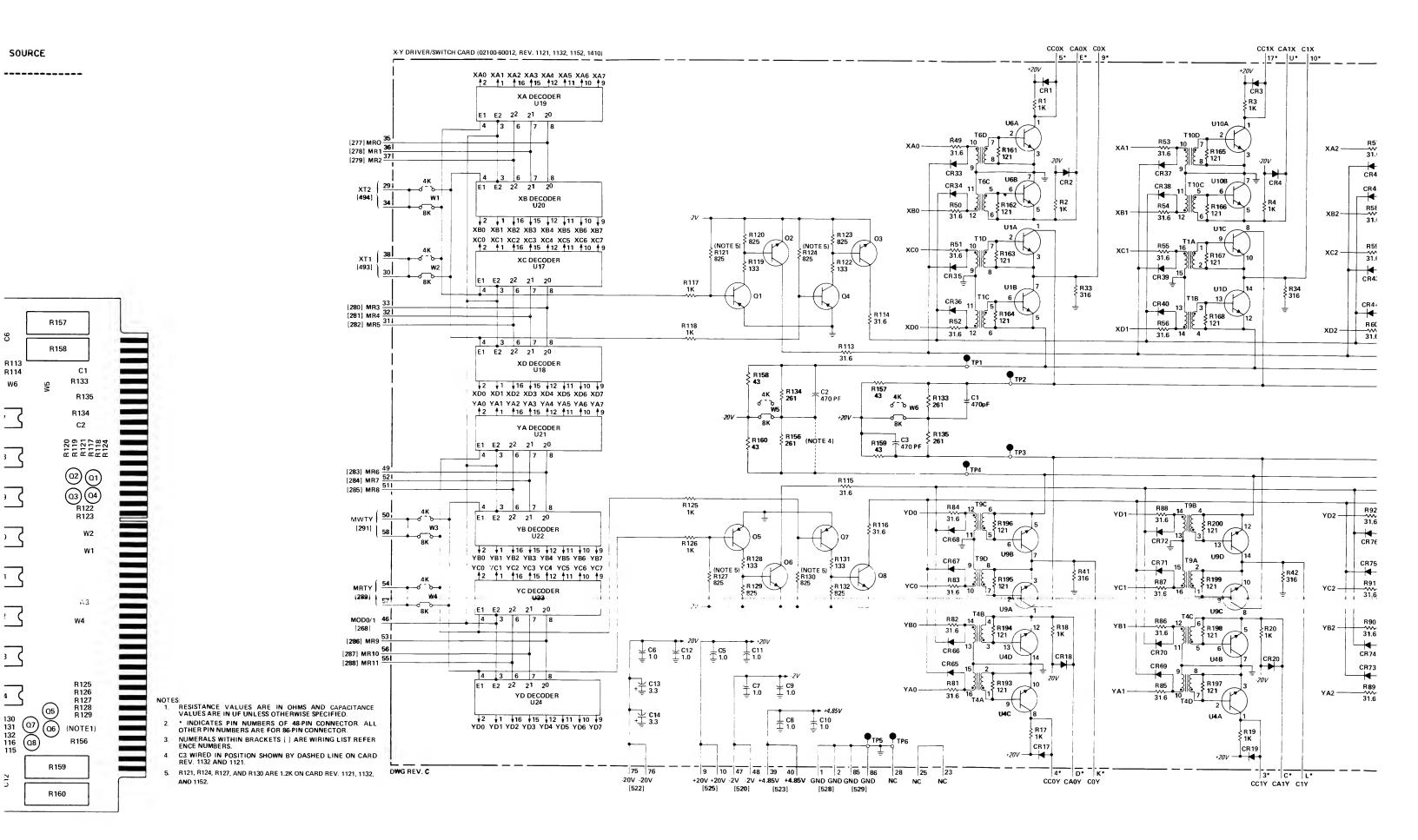


NOTES:
1. RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.

- 2. INDICATES PIN NUMBERS OF 48-PIN CONNECTOR. ALL OTHER PIN NUMBERS ARE FOR 86-PIN CONNECTOR.

 3. NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFER
- ENCE NUMBERS.

 4. C3 WIRED IN POSITION SHOWN BY DASHED LINE ON CARD
 PEV 1132 AND 1121
- R121, R124, R127, AND R130 ARE 1.2K ON CARD REV. 1121, 1132, AND 1152.



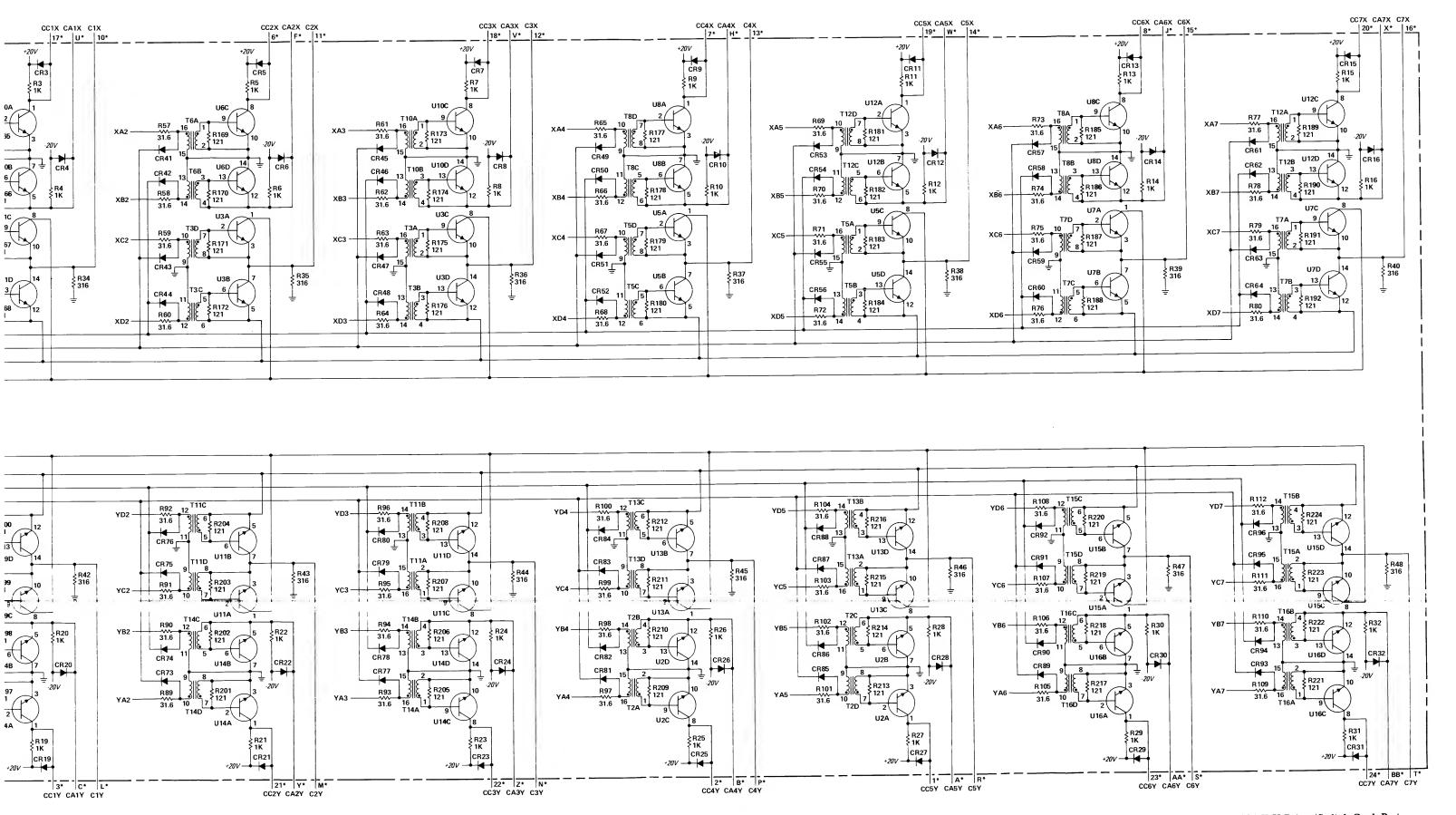


Figure 4-21. A104 X-Y Driver/Switch Card, Parts Location and Schematic Diagrams

Table 4-18. A105 Inhibit Driver Card (8K), Replaceable Parts

Reference Designation	HP Part Number	Qty	Description	Mtr Code	Mfr Part Number
A105 A105C1 A105C2 A105C3 A105C4	02100-60008 0160-0127 0160-0127 0160-0127 0160-0127	1 10	INHIBIT ORIVER CARD-8K C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW	28480 58289 58289 56289 56289	02100-60008 5C13CS-CML 5C13CS-CML 5C13CS-CML 5C13CS-CML
A105C7 A105C8 A105C9 A105C10 A105C14	0160-0128 0160-0127 0160-0127 0160-0127 0180-0116	3	C:FXD CER 2.2 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD ELECT 6.8 UF 10% 35VDCW	56289 56289 56289 56289 56289	5C152C2S-CML 5C13CS-CML 5C13CS-CML 5C13CS-CML 15006B5X9035B2-DYS
A105C15 A105C16 A105C17 A105C18 A105C19	0180-0374 0160-0128 0160-0127 0160-0127 0160-0127	1	C:FXD TANT. 10 UF 10% 20VDCW C:FXD CER 2.2 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW	5 \$ 289 5 \$ 289 5 \$ 289 5 \$ 289 5 \$ 289	150D106X9020B2-DYS 5C152C25-CML 5C13CS-CML 5C13CS-CML 5C13CS-CML
A105C23 A105CR1 A105CR2 A105CR3 A105CR4	0160-012B 1901-0620 1901-0620 1901-0620 1901-0620	34	C:FXD CER 2.2 UF 20% 25VDCW DIDDE BREAKDOWN DIDDE BREAKOOWN DIODE BREAKOOWN DIODE BREAKOOWN	56289 28+80 28+80 28+80 28+80	5C152C2S-CML 1901-0620 1901-0620 1901-0620 1901-0620
A105CR5 A105CR6 A105CR7 A105CR8 A105CR9	1901-0620 1901-0620 1901-0620 1901-0620 1901-0620		DIDDE BREAKDOWN DIODE BREAKOOWN DIDDE BREAKOOWN DIODE BREAKOOWN DIODE BREAKOOWN	28+80 28+80 28+80 28+80 28+80	1901-0620 1901-0620 1901-0620 1901-0620 1901-0620
A105CR10 A105CR21 A105CR22 A105CR23 A105CR24	1901-0620 1901-0620 1901-0620 1901-0620 1901-0620		DIODE BREAKDOWN DIODE BREAKDOWN DIODE BREAKOOWN DIODE BREAKOOWN DIODE BREAKOOWN	2 8 4 80 2 8 4 80 2 8 4 80 2 8 4 80 2 8 4 80	1901-0620 1901-0620 1901-0620 1901-0620 1901-0620
A105CR25 A105CR26 A105CR27 A105CR28 A105CR29	1901-0620 1901-0620 1901-0620 1901-0620 1901-0620		DIODE BREAKDOWN DIODE BREAKDOWN DIODE BREAKDOWN DIODE BREAKDOWN DIODE BREAKDOWN	2.8%80 2.8%80 2.8%80 2.8%80 2.8%80 2.8%80	1901-0620 1901-0620 1901-0620 1901-0620 1901-0620
A105CR30 A105CR31 A105CR32 A105CR45 A105CR46	1901-0620 1901-0620 1901-0620 1901-0620 1901-0620		DIDDE BREAKDOWN DIODE BREAKDOWN DIODE BREAKDOWN DIODE BREAKDOWN DIODE BREAKDOWN	2 8# 80 2 8# 80 2 8# 80 2 8# 80 2 8# 80	1901-0620 1901-0620 1901-0620 1901-0620 1901-0620
A105CR47 A105CR48 A105CR49 A105CR50 A105CR51	1901-0620 1901-0620 1901-0620 1901-0620 1901-0620		DIODE BREAKDOWN DIODE BREAKDOWN DIODE BREAKDOWN DIODE BREAKDOWN DIODE BREAKDOWN	28480 28480 28480 28480 28480	1901-0620 1901-0620 1901-0620 1901-0620 1901-0620
A105CR52 A105CR53 A105CR54 A105CR55 A105CR56	1901-0620 1901-0620 1901-0620 1901-0620 1901-0620	-	DIODE BREAKOOWN DIDDE BREAKDOWN DIODE BREAK DOWN DIOOE BREAKDOWN DIODE BREAKDOWN	28480 28480 28480 28480 28480	1901-0620 1901-0620 1901-0620 1901-0620 1901-0620
A105Q1 A105Q2 A105Q3 A105Q4 A105Q5	18 54-0 532 18 54-0 532 18 54-0 532 18 54-0 532 18 54-0 532	34	TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN	0.2135 0.2135 0.2135 0.2135 0.2135	2N5262 2N5262 2N5262 2N5262 2N5262 2N5262
A105011 A105012 A105013 A105014 A105015	1854-0532 1854-0532 1854-0532 1854-0532 1854-0532		TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN	02735 02735 02735 02735 02735	2N5262 2N5262 2N5262 2N5262 2N5262 2N5262
A105021 A105022 A105023 A105024 A105025	1854-0532 1854-0532 1854-0532 1854-0532 1854-0532		TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN	02735 02735 02735 02735 02735	2N5262 2N5262 2N5262 2N5262 2N5262 2N5262
A105026 A105033 A105034 A105035 A105036	1854-0532 1854-0532 1854-0532 1854-0532 1854-0532		TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN	027.35 027.35 027.35 027.35 027.35	2N5262 2N5262 2N5262 2N5262 2N5262 2N5262
£105037 £105038 £105045 £105046 £105047	1854-0532 1854-0532 1854-0532 1854-0532 1854-0532		TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN	027.15 027.15 027.35 027.35 027.35	2N5262 2N5262 2N5262 2N5262 2N5262 2N5262

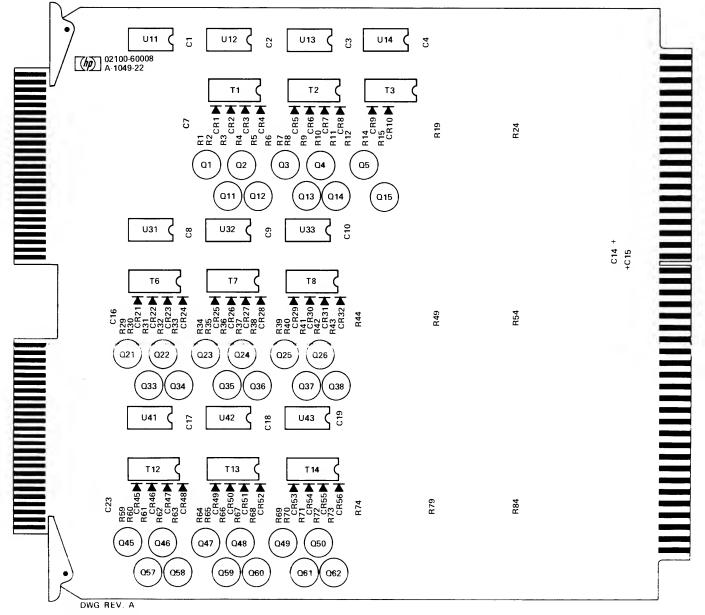
Table 4-18. A105 Inhibit Driver Card (8K), Replaceable Parts (Continued)

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
#105048 #105049 #105050 #105057	1854-0532 1854-0532 1854-0532 1854-0532 1854-0532		TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN	02735 02735 02735 02735 02735	2N5262 2N5262 2N5262 2N5262 2N5262 2N5262
A105Q59 A105Q60 A105Q61 A105Q62 A105R1	18 54-053 2 18 54-053 2 18 54-053 2 18 54-053 2 C 757-039 4	18	TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN R:FXD MET FLM 51.1 OHM 1% 1/8W	02735 02735 02735 02735 02735 28480	2N5262 2N5262 2N5262 2N5262 0757-0394
A105R2 A105R3 A105R4 A105R5 A105R5	0757-0403 0757-0403 0757-0403 0757-0403 0757-0494	34	R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 51.1 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0403 0757-0403 0757-0403 0757-0403 0757-0493
A105R7 A105R8 A105R9 A105R10 A105R11	0757-0394 0757-0403 0757-0403 0757-0403 0757-0403		R:FXD MET FLM 51.1 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0394 0757-0403 0757-0403 0757-0403 0757-0403
A105R12 A105R14 A105R15 A105R19 A105R24	0757-0394 0757-0403 0757-0403 0757-0394 0757-0394		R:FXD MET FLM 51.1 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 51.1 OHM 1% 1/8W R:FXD MET FLM 51.1 OHM 1% 1/8W	28480 28480 28480 28480 28480 28480	0757-0394 0757-0403 0757-0403 0757-0394 0757-0394
A105R29 A105R30 A105R31 A105R32 A105R33	0757-0394 0757-0403 0757-0403 0757-0403 0757-0403		R:FXD MET FLM 51.1 DHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W	284 80 284 80 284 80 284 80 284 80	0757-0394 0757-0403 0757-0403 0757-0403 0757-0403
A105R34 A105R35 A105R36 A105R37 A105R38	0757-0394 0757-0403 0757-0403 0757-0403 0757-0403		R:FXD MET FLM 51.1 DHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0394 0757-0403 0757-0403 0757-0403 0757-0403
A 105R39 A105R40 A 105R41 A 105R42 A 105R43	0757~0394 0757~0403 0757~0403 0757~0403 0757~0403	:	R:FXD MET FLM 51.1 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0394 0757-0403 0757-0403 0757-0403 0757-0403
A105R44 A105R49 A105R54 A105R59 A105R60	0757-0394 0757-0394 0757-0394 0757-0394 0757-0403		R:FXD MET FLM 51-1 OHM 1% 1/8W R:FXD MET FLM 51-1 OHM 1% 1/8W R:FXD MET FLM 51-1 OHM 1% 1/8W R:FXD MET FLM 51-1 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0394 0757-0394 0757-0394 0757-0394 0757-0403
A105R61 A105R62 A105R63 A105R64 A105R65	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403	i i	R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 51-1 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403
A105R66 A105R67 A105R68 A105R69 A105R70	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403		R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 CHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 51-1 GHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403
A105R71 A105R72 A105R73 A105R74 A105R79	0757-0403 0757-0403 0757-0403 0757-0394 0757-0394		R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 51.1 OHM 1% 1/8W R:FXD MET FLM 51.1 OHM 1% 1/8W	28480 28480 28480 28480 28480 28480	0757-0403 0757-0403 0757-0403 0757-0394 0757-0394
A10 5R84 A10 5T1 A10 5T2 A10 5T3 A10 5T6	0757-0394 9100-3180 9100-3180 9100-3180 9100-3180	9	R:FXD MET FLM 51.1 OHM 1% 1/8W TRANSFORMER TRANSFORMER TRANSFORMER TRANSFORMER	28480 28480 28480 28480 28480 28480	0757-0394 9100-3180 9100-3180 9100-3180 9100-3180
#105T7 #105T8 #105T12 #105T13 #105T14	9100-3180 9100-3180 9100-3180 9100-3180 9100-3180		TRANSFORMER TRANSFORMER TRANSFORMER TRANSFORMER TRANSFORMER TRANSFORMER	28480 28480 28480 28480 28480	9100-3180 9130-3183 9100-3180 9100-3180 9100-3183
A105U11 A105U12 A105U13 A105U14 A105U31	1820-0140 1820-0621 1820-0621 1820-0621 1820-0621	1 9	IC:TTL DUAL 4-INPT AND BUFFER IC:TTL QUAD 2-INPT NAND BUFFER W/OPEN C IC:TTL QUAD 2-INPT NAND BUFFER W/OPEN C IC:TTL QUAD 2-INPT NAND BUFFER W/OPEN C IC:TTL QUAD 2-INPT NAND BUFFER W/OPEN C	04713 01295 01295 01295 01295	MC3026P SN7438N SN7438N SN7438N SN7438N

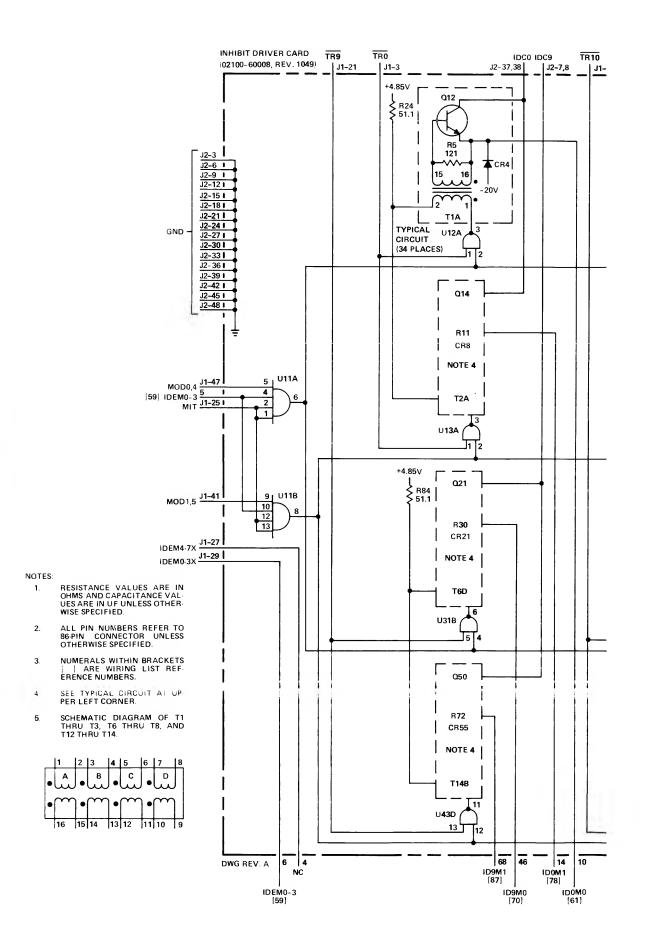
Table 4-18. A105 Inhibit Driver Card (8K), Replaceable Parts (Continued)

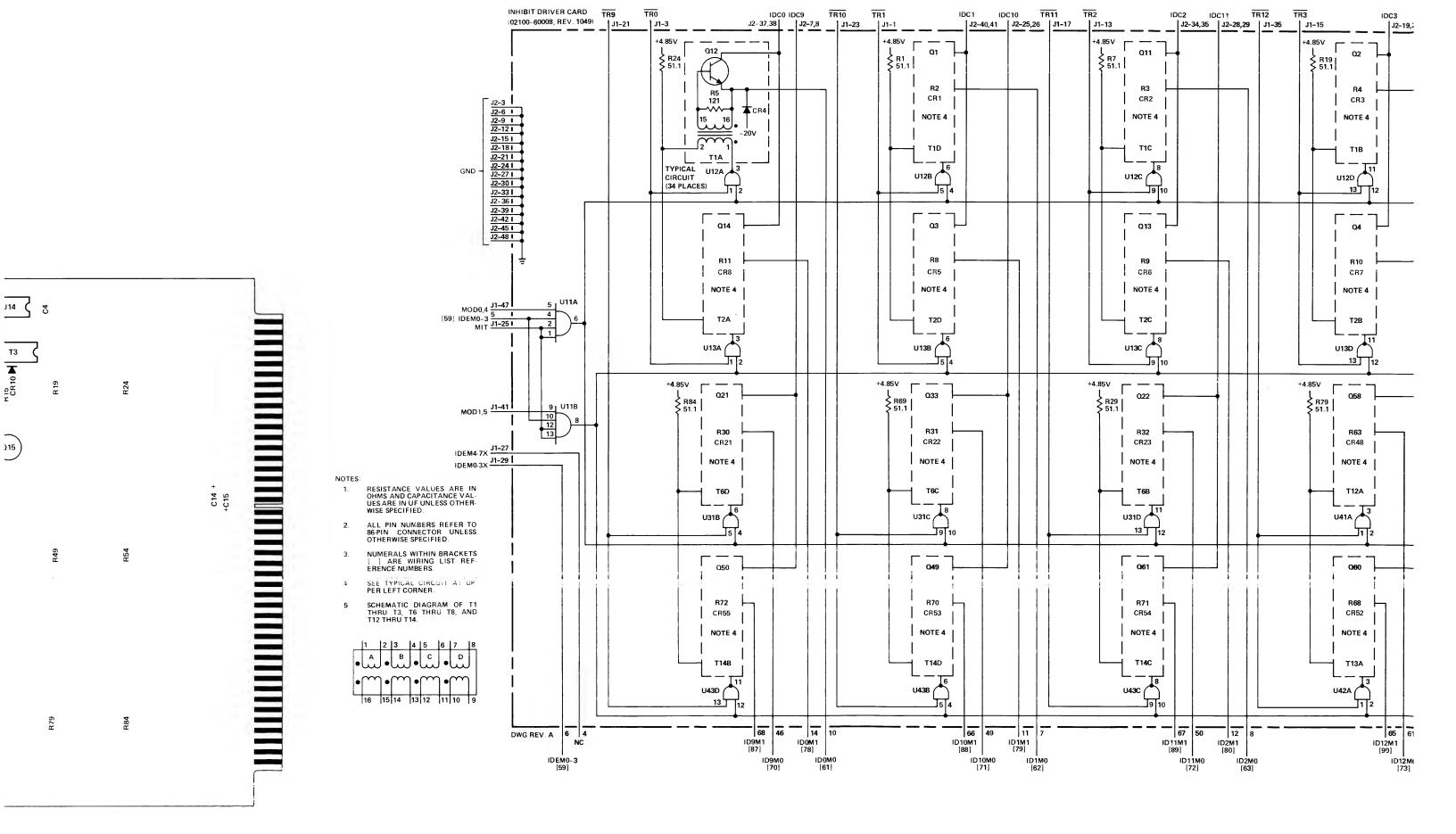
Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A105U32 A105U33 A105U41 A105U42 A105U43	1820-0621 1820-0621 1820-0621 1820-0621 1820-0621		IC:TTL QUAD 2-INPT NAND BUFFER W/OPEN C IC:TTL QUAD 2-INPT NAND BUFFER W/OPEN C IC:TTL QUAD 2-INPT NAND BUFFER W/OPEN C IC:TTL QUAD 2-INPT NAND BUFFER W/OPEN C IC:TTL QUAD 2-INPT NAND BUFFER W/OPEN C	\$1295 \$1295 \$1295 \$1295 \$1295 \$1295	SN7438N SN7438N SN7438N SN7438N SN7438N

REF.			*	INDICATES	SIGNAL	SOURCE
NO.		BACKPLANE LOCATION				
A105 (8K)					
59	A105-5	A105-6				
61	A103-25	A105-10*				
62	A103-27	A105-7*				
63	A103-29	A105-8*				
64	A103-31	A105-9*				
65	A103-33	A105-37*				
66	A103-35	A105-32*				
67	A103-37	A105-33#				
68	A103-41	A105-34*				
69	A103-43	A105-31#				
70	A103-45	A105-46*				
71	A103-49	A105-49*				
72	A103-51	A105-50*				
73	A103-53	A105-61*				
74	A103-55	A105-69*				
75	A103-57	A105-70*				
76	A103-59	A105-71*				
77	A103-61	A105-15*				
78	A103-26	A105-14#				
79	A103-28	A105-11*				
80	A103-30	A105-12*				
81	A103-32	A105-13*				
82	A103-34	A105-38*				
83	A103-36	A105-43#				
84	A103-38	A105-41*				
85	A103-42	A105-42*				
86	A103-44	A105-72*				
87	A103-46	A105-68*				
88	A103-50	A105-66*				
89	A103-52	A105-67*				
90	A103-54	A105-65*				
91	A103-56	A105-62*				
92	A103-58	A105-63#				
93	A103-60	A105-64#				
94	A103-62	A105-16*				



See table 4-18 for replaceable parts.





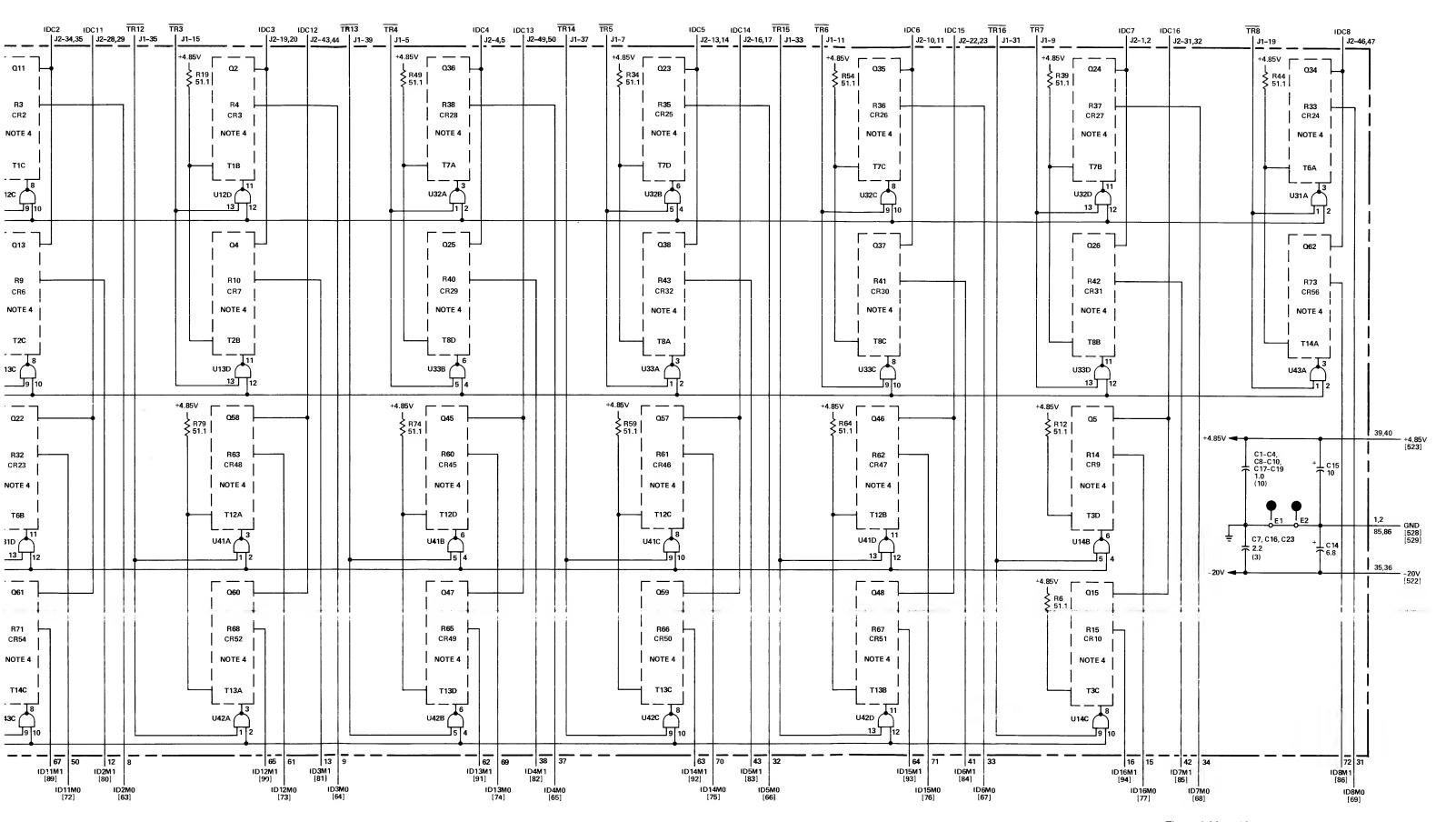


Figure 4-22. A105 Inhibit Driver Card (8K), Parts Location and Schematic Diagrams

Table 4-19. A105, A108 Inhibit Driver Card (16K), Replaceable Parts

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A105 A105C1 A105C2 A105C3 A105C4	02100-60009 0160-0127 0160-0127 0160-0127 0160-0127	2 18	INHI8IT DRIVER CARD - 16K C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW	25 80 56 289 56 289 56 289 56 289	02100-60009 5013CS-CML 5013CS-CML 5013CS-CML 5013CS-CML
A105C5 A105C6 A105C7 A105C8 A105C9	0160-0127 0160-0127 0160-0128 0160-0127 0160-0127	3	C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 2.2 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW	56 2 89 56 2 89 56 2 89 56 2 89 56 2 89	5C13CS-CML 5C13CS-CML 5C152C2S-CML 5C13CS-CML 5C13CS-CML
A105C10 A105C11 A105C12 A105C13 A105C14	0160-0127 0160-0127 0160-0127 0160-0127 0180-0116	1	C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD ELECT 6.8 UF 10% 35VDCW	56239 56239 56239 56239 56239	5C13CS-CML 5C13CS-CML 5C13CS-CML 5C13CS-CML 150D685X903582-DYS
A105C15 A105C16 A105C17 A105C18 A105C19	0180-0374 0160-0128 0160-0127 0160-0127 0160-0127	1	C:FXD TANT. 10 UF 10% 20VDCW C:FXD CER 2.2 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW	56439 56439 56439 56439 56439	150D106X9U2082-0YS 5C152C2S-CML 5C13CS-CML 5C13CS-CML 5C13CS-CML
A105C20 A105C21 A105C22 A105C23 A105CR1 THRU A105CR68	0160-0127 0160-0127 0160-0127 0160-0128 1901-0620	68	C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VDCW C:FXD CER 1.0 UF 20% 25VOCW C:FXD CER 2.2 UF 20% 25VDCW DIODE BREAKDDWN	56249 56249 56249 56249 28440	5C13CS-CML 5C13CS-CML 5C13CS-CML 5C13CS-CML 5C152C2S-CML 1901-0620
A105Q1 THRU A105Q68	1854-0532	68	TSTR:SI NPN	027∄5	2N5262
A105R1 A105R2 A105R3 A105K4 A105R5	0757-0394 0757-0403 0757-0403 0757-0403 0757-0403	2 0 6 8	R:FXD MET FLM 51.1 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/9W R:FXD MET FLM 121 CHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 DHM 1% 1/8W	284±0 284±0 284±0 284±0 284±0 284±0	0757-0394 0757-0403 0757-0403 0757-0403 0757-0403
A105R6 A105R7 A105R8 A105R9 A105R10	0757-0394 0757-0394 0757-0403 0757-0403 0757-0403		R:FXD MET FLM 51-1 OHM 1% 1/8W R:FXD MET FLM 51-1 DHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W	284 \$0 284 \$0 284 \$0 284 \$0 284 \$0 284 \$0	0757-0394 0757-0394 0757-0403 0757-0403 0757-0403
A105R11 A105R12 A105R13 A105R14 A105R15	0757-0403 0757-0394 0757-0394 0757-0403 0757-0403		R:FXD MET FLM 121 DHM 1% 1/8W R:FXD MET FLM 51.1 DHM 1% 1/8W R:FXD MET FLM 51.1 DHM 1% 1/8W R:FXD MET FLM 121 DHM 1% 1/8W R:FXD MET FLM 121 DHM 1% 1/8W	284 \$0 284 \$0 284 \$0 284 \$0 284 \$0	0757-0403 0757-0394 0757-0394 0757-0403 0757-0403
A105R16 A105R17 A105R18 A105R19 A105R20	0757-0403 0757-0403 0757-0394 0757-0394 0757-0403		R:FXD MET FLM 121 DHM 1% 1/8W R:FXD MET FLM 121 DHM 1% 1/8W R:FXD MET FLM 51.1 OHM 1% 1/8W R:FXD MET FLM 51.1 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W	284 8) 284 8) 284 8) 284 8 () 284 8 ()	0757-0403 0757-0403 0757-0394 0757-0394 0757-0403
A 10 5R 2 1 A 10 5R 2 2 A 10 5R 2 3 A 10 5R 2 4 A 10 5R 2 5	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403		R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 DHM 1% 1/8W R:FXD MET FLM 51.1 OHM 1% 1/8W R:FXD MET FLM 121 DHM 1% 1/8W	284 80 284 80 284 80 284 80 284 80	0757-0403 0757-0403 0757-0403 0757-0403 0757-0403
A105R26 A105R27 A105R28 A105R29 A105R30	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403		R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 DHM 1% 1/8W R:FXD MET FLM 121 DHM 1% 1/8W R:FXD MET FLM 51-1 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W	2848(1) 2848(1) 2849(1) 2848(1) 2848(1)	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403
A 105R31 A105R32 A105R33 A105R34 A105R35	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403		R:FXD MET FLM 121 DHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 51-1 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W	284 84 284 84 284 84 284 84 284 84	0757-0403 0757-0403 0757-0403 0757-0403 0757-0394
A105R36 A105R37 A105R38 A105R39 A105R40	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403		R:FXD MET FLM 121 DHM 1% 1/8W R:FXD MET FLM 121 DHM 1% 1/8W R:FXD MET FLM 121 DHM 1% 1/8W R:FXD MET FLM 51.1 DHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W	284 8C 284 8C 284 8C 284 8C 284 8C	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403
A 105R41 A105R42 A 105R43 A 105R44 A 105R45	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403		R:FXD MET FLM 121 DHM 1% 1/8W R:FXD MET FLM 121 DHM 1% 1/8W R:FXO MET FLM 121 DHM 1% 1/8W R:FXD MET FLM 51.1 DHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403

.1			

Table 4-19. A105, A108 Inhibit Driver Card (16K), Replaceable Parts (Continued)

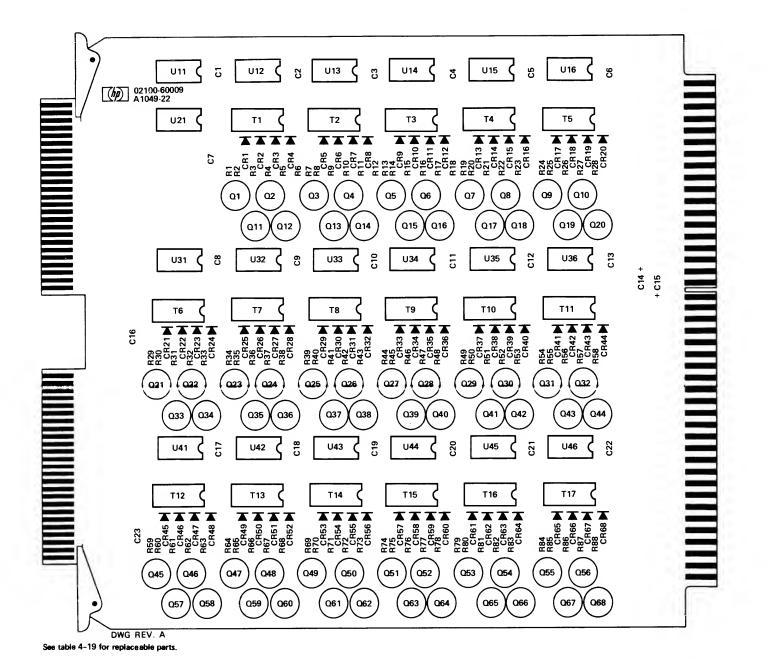
Reference Designation	HP Part Number	Qty	Description	Mfr Cotle	Mfr Part Number
A105R46 A105R47 A105R48 A105R49 A105R50	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403		R:FXD MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 51.1 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W	284 40 284 40 284 40 284 40 284 50	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403
A105R51 A105R52 A105R53 A105R54 A105R55	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403		R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/6W R:FXO MET FLM 121 OHM 1% 1/6W R:FXO MET FLM 51.1 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W	284 284 284 284 30 284 284 30	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403
A105R56 A105R57 A105R58 A105R59 A105R60	0757-0403 0757-0403 0757-0403 0757-0403 0757-0403		R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 51-1 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W	284 0 284 0 284 0 284 0 284 0 284 0	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403
A105R61 A105R62 A105R63 A105R64 A105R65	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403		R:FXD MET FLM 121 OHM 1% 1/8W R:FXD MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 51.1 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W	284±0 28450 28450 28450 28450	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403
A105R66 A105R67 A105R68 A105R69 A105R70	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403		R:FXD MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 51.1 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403
A105R71 A105R72 A105R73 A105R74 A105R75	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403		R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 51.1 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W	284 80 284 80 284 80 284 80 284 80	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403
A105R76 A105R77 A105R78 A105R79 A105R80	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403		R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 51.1 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W	284 80 284 80 284 80 284 80 284 80	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403
A105R81 A105R82 A105R83 A105R84 A105R85	0757-0403 0757-0403 0757-0403 0757-0403 0757-0403		R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W R:FXO MET FLM 51-1 OHM 1% 1/8W R:FXO MET FLM 121 OHM 1% 1/8W	284 \$ 0 284 \$ 0 284 \$ 0 284 \$ 0 284 \$ 0	0757-0403 0757-0403 0757-0403 0757-0394 0757-0403
A105R86 A105R87 A105R88 A105T1 THRU A105T17	0757-0403 0757-0403 0757-0403 9100-3180	17	R:FXO MET FLM 121 CHM 1% 1/8W R:FXO MET FLM 121 CHM 1% 1/8W R:FXO MET FLM 121 CHM 1% 1/8W TRANSFORMER	284 8) 284 8) 284 8) 284 8 ·)	0757-0403 0757-0403 0757-0403 9100-3180
A105U11 A105U12 A105U13 A105U14	1820-0140 1820-0621 1820-0621 1820-0621	2 17	IC:TTL OUAL 4-INPT AND BUFFER IC:TTL QUAD 2-INPT NAND BUFFER W/OPEN C IC:TTL QUAD 2-INPT NAND BUFFER W/OPEN C IC:TTL QUAD 2-INPT NAND BUFFER W/OPEN C	047 £3 012 95 012 95 012 95	MC 3026P SN 7438N SN 7438N SN 7438N
A105U15 A105U16 A105U21 A105U31 A105U32	1820-0621 1820-0621 1820-0140 1820-0621 1820-0621		IC:TTL QUAD 2-INPT NANO 8UFFER W/OPEN C IC:TTL QUAO 2-INPT NAND BUFFER W/OPEN C IC:TTL QUAO 4-INPT AND 8UFFER W/OPEN C IC:TTL QUAO 2-INPT NANO 8UFFER W/OPEN C	01295 01295 04713 01295 01295	SN 7438N SN 7438N MC3 026P SN 7438N SN 7438N
A105U33 A105U34 A105U35 A105U36 A105U41	1820-0621 1820-0621 1820-0621 1820-0621 1820-0621		IC:TTL QUAO 2-INPT NAND BUFFER W/OPEN C IC:TTL QUAO 2-INPT NANO BUFFER W/OPEN C IC:TTL QUAO 2-INPT NANO BUFFER W/OPEN C IC:TTL QUAO 2-INPT NANO BUFFER W/OPEN C IC:TTL QUAO 2-INPT NANO BUFFER W/OPEN C	012 012 012 012 012 012 012 9	SN7438N SN7438N SN7438N SN7438N SN7438N
A105U42 A105U43 A105U44 A105U45 A105U46	1820-0621 1820-0621 1820-0621 1820-0621 1820-0621		IC:TTL QUAO 2-INPT NANO BUFFER W/OPEN C IC:TTL QUAD 2-INPT NANO BUFFER W/OPEN C IC:TTL QUAO 2-INPT NANO BUFFER W/OPEN C IC:TTL QUAO 2-INPT NANO BUFFER W/OPEN C IC:TTL QUAO 2-INPT NANO BUFFER W/OPEN C	012史 012史 012史 012史 012史	SN7438N SN7438N SN7438N SN7438N SN7438N
A108			SAME AS A105, USE PREFIX A108	•))	

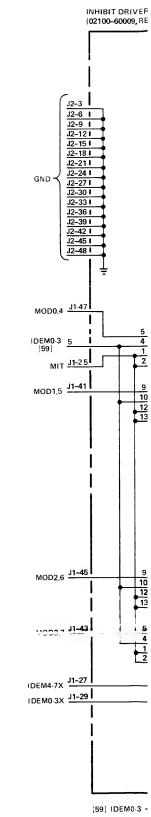
			* INDICATES SIGNAL SOURCE
REF.		BACKPLANE LOCATION	* INDICATES SIGNAL SOURCE
A105(59	16K) A105-5	A105-6	
61	A103-25	A105-10*	
62	A103-27	A105-7*	
63	A103-29	A105-8*	
64 65	A103-31 A103-33	A105-9* A105-37*	
66	A103-35	A105-32*	
67	A103-37	A105-33*	
68	A103-41	A105-34#	
69 70	A103-43 A103-45	A105-31* A105-46*	
71	A103-49	A105-49*	
72	A103-51	A105-50#	
73	A103-53	A105-61*	
74 75	A103-55 A103-57	A105-69* A105-70*	
76	A103-59	A105-71*	
77	A103-61	A105-15*	
78	A103-26	A105-14#	
79 80	A103-28 A103-30	A105-11* A105-12*	
81	A103-32	A105-13*	
82	A103-34	A105-38*	
83	A103-36	A105-43* A105-41*	
84 85	A103-38 A103-42	A105-42*	
86	A103-44	A105-72*	
87	A103-46	A105-68*	
88	A103-50	A105-66* A105-67*	
89 9ø	A103-52 A103-54	A105-65*	
91	A103-56	A105-62*	
92	A103-58	A105-63*	
93	A103-60	A105-64*	
94 95	A103-62 A102-25	A105-16# A105-26#	
96	A102-27	A105-19*	
97	A102-29	A105-25#	
98	A102-31	A105-24* A105-53*	
99 100	A102-33 A102-35	A105-60*	
101	A102-37	A105-59#	
102	A102-41	A105-58*	
103	A102-43	A105-52* A105-44*	
104 105	A102-45 A102-49	A105-51*	
106	A102-51	A105-45*	
107	A102-53	A105-76*	
108 109	A102-55 A102-57	A105-73* A105-74*	
110	A102-59	A105-75*	
111	A102-61	A105-17#	
112	A102-26	A105-20*	
113	A102-28 A102-30	A105-23* A105-22*	
114 115	A102-30	A105-21*	
116	A102-34	A105-57*	
117	A102-36	A105-54#	
118 119	A102-38 A102-42	A105-56* A105-55*	
120	A102-42 A102-44	A105-78*	
121	A102-46	A105-79*	
122	A102-50	A105-81*	
123 124	A102-52 A102-54	A105-80* A105-84*	
125	A102-56	A105-77*	
126	A102-58	A105-83*	
127	A102-60	A105-82*	
128	A102-62	A105-18*	

NOTES:

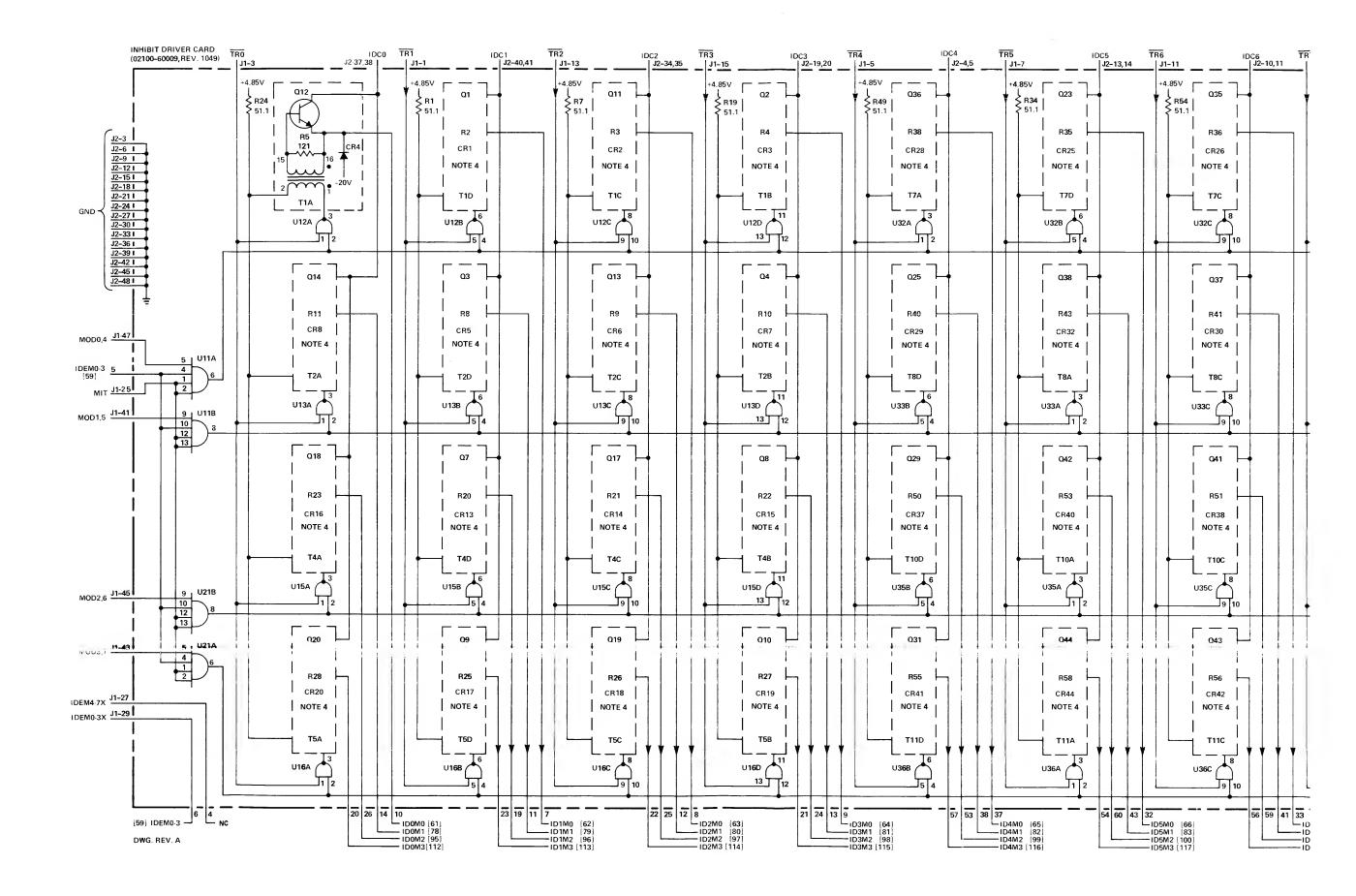
- RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE
- ARE IN UF UNLESS OTHERWISE
 SPECIFIED.
 2. ALL PIN NUMBERS REFER TO
 86-PIN CONNECTOR UNLESS
 OTHERWISE SPECIFIED.
 3. NUMBERS WITHIN BRACKETS []
 ARE WIRING LIST REFERENCE
 NUMBERS.
 4. SEE TYPICAL CIRCUIT AT UPPER
 LEFT CORNER.
 5. SCHEMATIC DIAGRAM OF T1
 THRU T17.
- THRU T17.

	1	2	3	4	5	6	7	8
	Α		В	•	С		D	
	<u> </u>		$\overline{\mathbf{u}}$		<u></u>		$\underline{}$	
•	~~	•	$\overline{}$	•	يس	•	<u> </u>	
•	16		14			11	10	9





DWG. REV. A



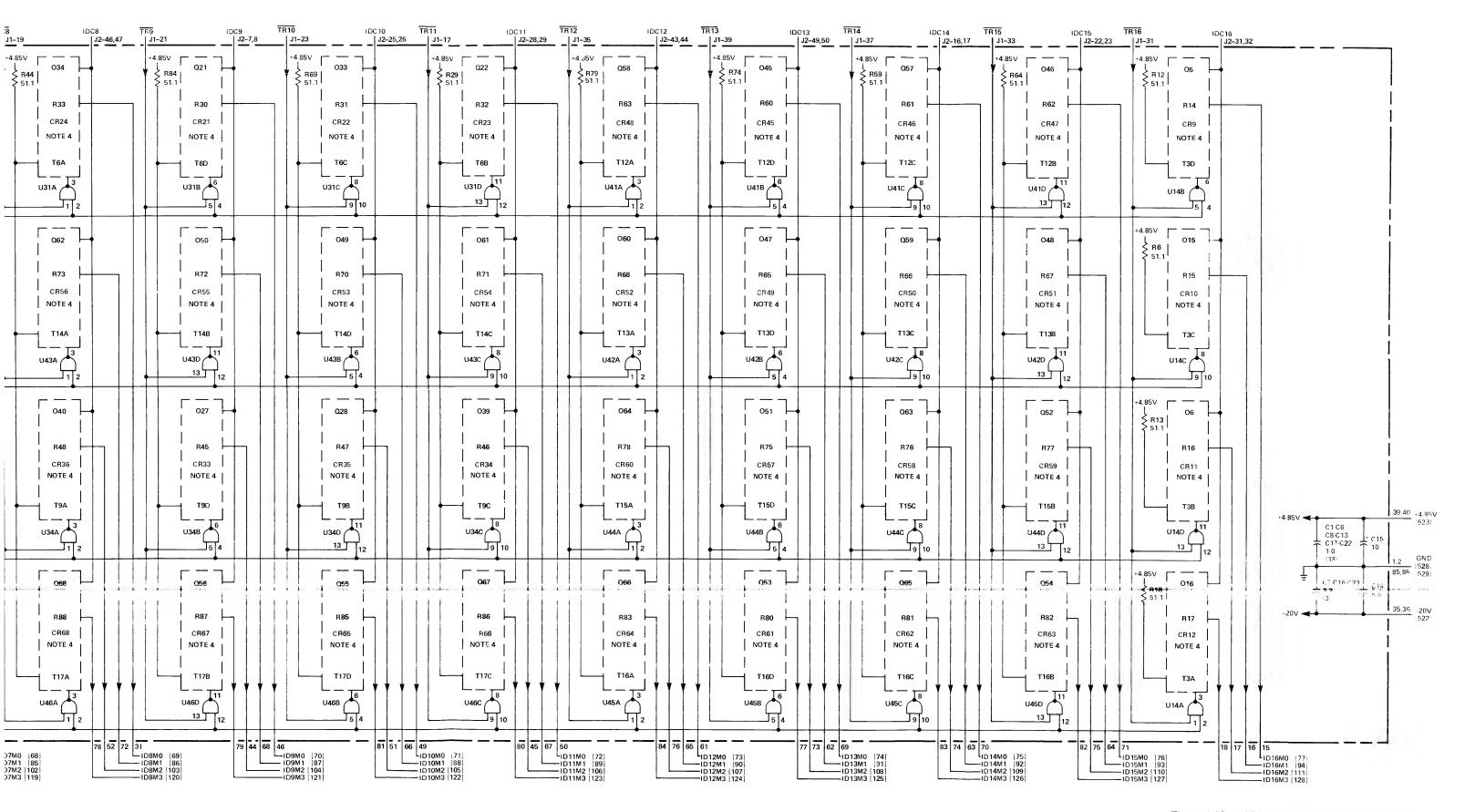
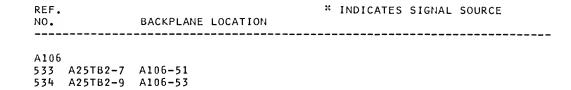


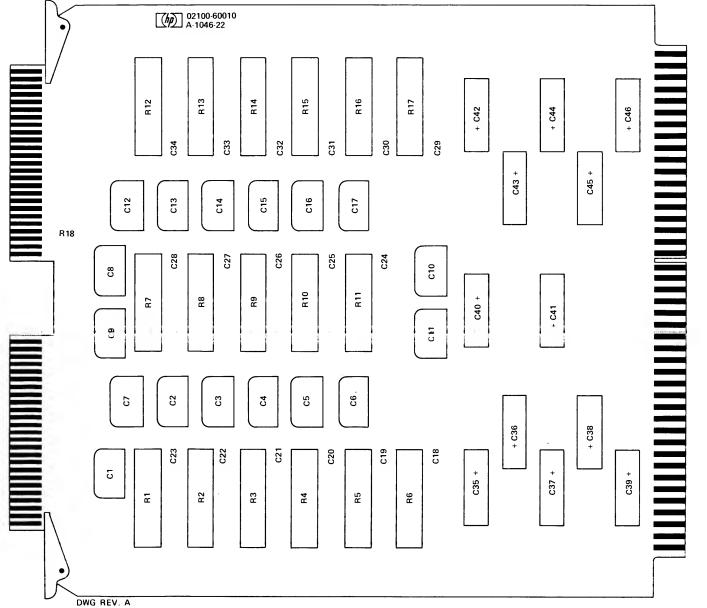
Figure 4-23. A105 Inhibit Driver Card (16K), Parts Location and Schematic Diagrams

Table 4-20. A106 Inhibit Driver Load Card, Replaceable Parts

Reference Designation	HP Part Number	Oty	Description	Mir Cede	Mfr Part Number
A106 A106C1 THRU	C21D0-6DD10 0160-3871	1 17	INHIBIT DRIVER LOAO CARO C:FXD MICA 2000 PF 5% 100VDCW	28i₁80 72i36	D2133-6DD10
A106C17 A106C18 THRU A106C34	0160-3901	17	C:FXD CER 2.2 UF 20% 25VDCW	56/89	RDM19F202JIS 5C120-CML
A1D6C35 A106C36 A1D6C37 A1D6C38 A1D6C39	018D-0094 D180-DD94 018D-0094 018D-0094 018D-D094	12	C:FXO ELECT 10D UF +75-10% 25V0CW C:FXD ELECT 1DD UF +75-10% 25V0CW C:FXD ELECT 1DD UF +75-10% 25V0CW C:FXD ELECT 1DD UF +75-10% 25V0CW C:FXO ELECT 1DD UF +75-10% 25V0CW	562 89 562 89 562 89 562 89 562 89	30D1D7G025002-0SM 3DD107GD25D02-0SM 3DD107GD25D02-0SM 30D107GD25D02-0SM 3DD107GD25D02-DSM
A1D6C4D A1D6C41 A1D6C42 A1D6C43 A1D6C44	0180-0094 0180-0094 018D-0094 D180-0094 D180-0094		C:FXO ELECT 1DD UF +75-10% 25VDCW C:FXD ELECT 1DD UF +75-10% 25VDCW C:FXD ELECT 1DD UF +75-10% 25VDCW C:FXD ELECT 1DD UF +75-10% 25VDCW C:FXD ELECT 1DD UF +75-10% 25VDCW	562 89 562 89 562 89 562 89 564 89	3001D7GD25DD2-OSM 3DD107GD25D02-DSM 3DD107GD25D02-DSM 3DD107GD25D02-DSM 3DD107GD25DD2-DSM
A106C45 A1D6C46 A1D6R1 THRU A1D6R17	D18D-0094 0180-0094 0811-2988	17	C:FXO ELECT 1DD UF +75-10% 25VDCW C:FXD ELECT 1DD UF +75-10% 25VOCW R:FXD WW 22 DHM 1% 7W	56≩ 89 56≩ 89 28≇ 80	3D01D7GD25002-DSM 3DD107GD25DD2-OSM 0811-2988
A 106R 18	0811-2D31	1	R:FXD WW 815 OHM 3% 1/4W	28≇80	D811-2031

		*	





INHIBIT DRIVER LOAD CARD (02100-60010, REV. 1046) 10,12 | 14,16 | 18,20 | 22,24 | 26,28 | 30,32 | 56,58 | 60,62 | 64,66 | 68,70 | 72,74 | 76,78 | 80,82 | 84 TSEN1 , [533] 137,38 IDC0 R2,22 C2,2000 PF TSEN2 [534] 40,41 IDC1 R3,22 C3, 2000 PF C35 100 34,35 IDC2 3 | 5,7 C1, 2000 PF R11,22 1_{19,20} IDC3 9,11 13,15 C11, 2000 PF C37 100 R16,22 17,19 4,5 IDC4 21,23 C38 100 R13,22 25,27 13,14 IDC5 C13, 2000 PF 29,31 R14,22 55,57 59,61 C14, 2000 PF R17,22 63,65 - IDC7 C17, 2000 PF 67,69 R5,22 46,47 IDC8 71,73 C5, 2000 PF 75,77 C42 100 79,81 R15,22 C15, 2000 PF 83, C43 100 R9,22 GND 85,86 | [529] 25,26 IDC10 C9, 2000 PF C25 2.2 R8,22 28,29 IDC11 3,6 C21 2.2 R4,22 9,12 43,44 IDC12 C4, 2000 PF 15,18 R6,22 49,50 IDC13 21,24 27,30 R 12,22 33,36 1_{16,17} IDC14 NOTES: 39,42 RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED. C12, 2000 PF C27 2.2 R10.22 22,23 IDC15 45,48 ALL PIN NUMBERS REFER TO 86-PIN CON-NECTOR UNLESS OTHERWISE INDICATED. C10, 2000 PF NUMERALS WITHIN BRACKETS [] ARE WIRING REFERENCE NUMBERS. 31,32 IDC16 C7, 2000 PF DWG REV. B

Figure 4-24. A106 Inhibit Driver Load Card, Parts Location and Schematic Diagrams

Table 4-21. A107 Data Control Card, Replaceable Parts

Reference Designation	HP Part Number	Qty	Description	Mr Code	Mfr Part Number
A1J7 A107C1 A107C2 A107C3 A107C4	C2100-60011 0160-2055 C160-2055 0180-0197	1 17 6	OATA CONTROL CARO C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO ELECT 2.2 UF 10% 20VOCW C:FXD ELECT 2.2 UF 10% 20VOCW	2 8 4 80 5 6 2 8 9 5 6 2 8 9 5 6 2 8 9 5 6 2 8 9	02100-60011 C023F101F103ZS22-C0H C023F101F103ZS22-C0H 1500225X9020A2-DYS 1500225X9020A2-OYS
A107C5 A107C6 A107C7 A107C8 A107C9	0160-2055 0160-2055 0160-0127 0160-2055 0160-2055	7	C:FXD CER 0.01 UF +80-20% 100V0CW C:FXO CER 0.01 UF +80-20% 100V0CW C:FXO CER 1.0 UF 20% 25V0CW C:FXO CER 0.01 UF +80-20% 100V0CW C:FXD CER 0.01 UF +80-20% 100V0CW	5 6 289 5 6 289 5 6 289 5 6 289 5 6 289	C023F101F103ZS22-C0H C023F101F103ZS22-C0H 5C13CS-CML C023F101F103ZS22-C0H C023F101F103ZS22-C0H
A107C10 A107C11 A107C12 A107C13 A107C14	0160-0127 0160-0127 0160-2055 0160-2199 0160-2055	2	C:FXD CER 1.0 UF 20% 25VOCW C:FXO CER 1.0 UF 20% 25VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO MICA 30 PF 5% 300VOCW C:FXO CER 0.01 UF +80-20% 100VOCW	5 6 289 5 6 289 5 6 289 2 8 480 5 6 289	5C13CS-CML 5C13CS-CML C023F101F103ZS22-C0H 0160-2199 C023F101F103ZS22-C0H
A107C15 A107C16 A107C17 A107C19 A107C20	0160-2199 0140-0196 0140-0198 0160-2055 0180-0197	1	C:FXO MICA 30 PF 5% 300VOCW C:FXO MICA 150 PF 5% C:FXO MICA 200 PF 5% C:FXO CER 0.01 UF +80-20% 100VDCW C:FXO ELECT 2.2 UF 10% 20VOCW	28480 72136 72136 56289 56289	0160-2199 R0M15F151J3C R0M15F20J3C C023F101F103ZS22-C0H 150022SX9020A2-0YS
A107C21 A107C22 A107C23 A107C24 A107C25	0160-0127 0160-0127 0180-0197 0160-0127 0160-0127		C:FXD CER 1.0 UF 20% 25VOCW C:FXO CER 1.0 UF 20% 25VOCW C:FXO ELECT 2.2 UF 10% 20VOCW C:FXO CER 1.0 UF 20% 25VOCW C:FXO CER 1.0 UF 20% 25VOCW	5689 5689 5689 5689	5C13CS-CML 5C13CS-CML 1500225X9020A2-0YS 5C13CS-CML 5C13CS-CML
A107C26 A107C27 A107C28 A107C29 A107C30	0160-2055 0180-0197 0180-0197 0160-2055 0160-2055		C:FXO CER 0.01 UF +80-20% 100VOCW C:FXO ELECT 2.2 UF 10% 20VOCW C:FXO ELECT 2.2 UF 10% 20VOCW C:FXO CER 0.01 UF +80-20% 100VOCW C:FXD CER 0.01 UF +80-20% 100VOCW	562 89 562 89 562 89 562 89 562 89	C023F101F103ZS22-C0H 1500225X9020A2-OYS 1500225X9020A2-OYS C023F101F103ZS22-C0H C023F101F103ZS22-C0H
A107C31 A107C32 A107C33 A107C34 A107C35	0160-2055 0160-2055 0160-2055 0160-2055 0140-0199	1	C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 CER 0.01 UF +80-20% 100V0CW C:FX0 MICA 240 PF 5%	562°89 562°89 562°89 562°89 284°80	C023F101F103Z522-C0H C023F101F103Z522-C0H C023F101F103Z522-C0H CD23F101F103Z522-C0H 0140-0199
A107C36 A107CR1 A107CR2 A1D7CR3 A107CR4	0160-2055 1910-0016 1910-0016 1910-0016 1990-0326	5	C:FXO CER 0.01 UF +80-20% 100V0CW 0100E:GERMANIUM 100MA/0.85V 60PIV 0100E:GERMANIUM 10DMA/0.85V 60PIV 0100E:GERMANIUM 10DMA/0.85V 60PIV D100E:VISIBLE LIGHT EMITTER	562 89 933 32 933 32 933 32 284 80	C023F101F103ZS22-C0H 02361 02361 02361 1990-0326
A107CR5 A107CR6 A107CR7 A1D7CR8 A107CR9	1910-0016 1910-0016 5080-0059 5D8D-D059 5080-D059	7	DIODE:GERMANIUM 10DMA/0.85V 60PIV DIOOE:GERMANIUM 1DOMA/0.85V 60PIV PIN:DIODE PIN:DIODE PIN:DIODE	93232 93332 2848D 2848D 2848D	D2361 02361 5080-D059 5080-0059 5D80-0059
A107CR10 A107CR11 A107CR12 A107CR13 A107OL1	5080-0059 5080-0059 5080-0059 5080-0059 1810-0064	1	PIN:DIODE PIN:DIOOE PIN:DIODE PIN:DIODE OELAY LINE:	284 80 284 80 284 8D 284 80 D1961	5D80-D059 508D-0059 5080-0059 5080-0D59 GG4
A107E1 THRU A107E9	036D-D294	9	TERMINAL:SOLDER POINT	28480	0360-0294
A10702 A10703 A10704 A10705	1854-0019 1854-0019 1854-0019 1854-0019	7	TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN	28 \$ 80 28 \$ 80 28 \$ 80 28 \$ 80 28 \$ 80	1854-0019 1854-0019 1854-0019 1854-0019
A10706 A10707 A10708 A107K3 A107R4	1854-DD19 1854-DD19 1854-0019 0698-0082 0698-0082	21	TSTR:SI NPN TSTR:SI NPN TSTR:SI NPN R:FXD MET FLM 464 OHM 1% 1/8W R:FXD MET FLM 464 CHM 1% 1/8W	28480 28480 28480 28480 .28480	1854-D019 1854-0019 1854-0019 D698-DD82 D698-DD82
A107R7 A107R8 A107R9 A107R10 A107R11	0698-3444 0698-3444 0698-3444 0698-3444 0698-3444	17	R:FXD MET FLM 316 OHM 1% 1/8W R:FXO MET FLM 316 OHM 1% 1/8W R:FXD MET FLM 316 OHM 1% 1/8W R:FXD MET FLM 316 OHM 1% 1/8W R:FXD MET FLM 316 OHM 1% 1/8W	284 80 284 80 284 80 284 80 284 80	D698-3444 D698-3444 0698-3444 D698-3444 D698-3444
A107R12 A107R13 A107R17(NDTE 2) A107R17(NDTE 3) A107R18 A107R18	0698-3444 0698-3444 0698-0082 0698-3442 0757-028D 0757-0280	1 13	R:FXD MET FLM 316 OHM 1% 1/8W R:FXD MET FLM 316 OHM 1% 1/6W R:FXD MET FLM 464 OHM 1% 1/8W R:FXD MET FLM 237 OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W	28480 28480 28480 28480 28480 28480	0698-3444 D698-3444 0698-0082 0698-3442 D757-028D 0757-D280

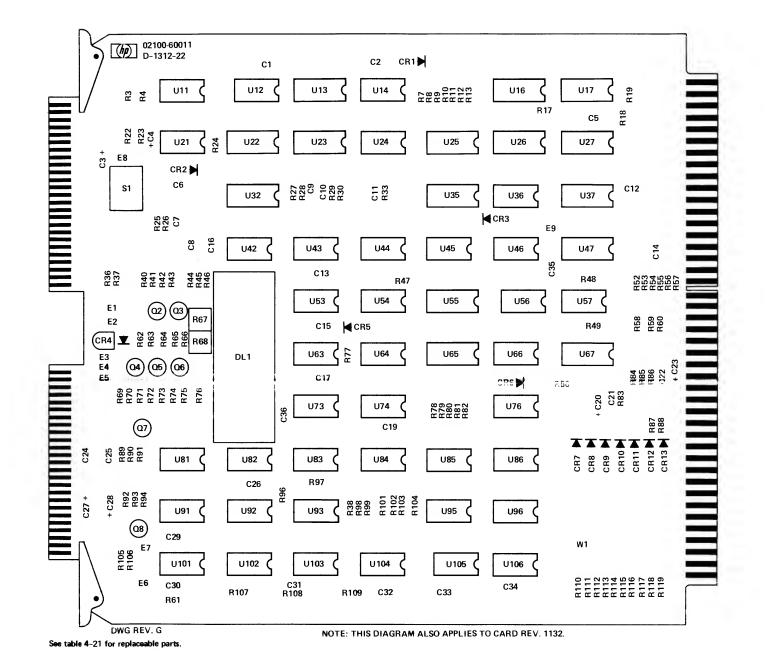
Table 4-21. A107 Data Control Card, Replaceable Parts (Continued)

Reference Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A107R22	0698-0082	1	R:FXD MET FLM 464 OHM 1% 1/8W	28480	0698-0082
A107R23	0698-0082		R:FXD MET FLM 464 OHM 1% 1/8W	28480	0698-0082
A107R24	0698-3444		R:FXD MET FLM 316 OHM 1% 1/8W	28480	0698-3444
A107R25	0698-3443		R:FXD MET FLM 287 OHM 1% 1/8W	28480	0698-3443
A107R26	0757-0280		R:FXD MET FLM 1K OHM 1% 1/8W	28480	0757-0280
A107R27	0698-0082		R:FXO MET FLM 464 OHM 1% 1/8W	28480	0698-0082
A107R28	0698-0082		R:FXD MET FLM 464 OHM 1% 1/8W	28480	0698-0082
A107R29	0698-3444		R:FXD MET FLM 316 OHM 1% 1/8W	28480	0698-3444
A107R30	0698-0082		R:FXD MET FLM 464 OHM 1% 1/8W	28480	0698-0082
A107R33	0698-0082		R:FXD MET FLM 464 OHM 1% 1/8W	28480	0698-0082
A107R36 A107R37 A107R38 A107R40 A107R41	0757-0401 0757-0401 C698-3442 0698-3151 0698-3157	5 3 5 5	R:FXD MET FLM 100 CHM 1% 1/8W R:FXD MET FLM 100 DHM 1% 1/8W R:FXD MET FLM 237 OHM 1% 1/8W R:FXO MET FLM 2.87K OHM 1% 1/8W R:FXO MET FLM 19.6K OHM 1% 1/8W	28480 28480 28480 28480 28480	0757-0401 0757-0401 0698-3442 0698-3151 0698-3157
A107R42 A107R43 A107R44 A107R45 A107R46	0698-3151 0698-3157 0757-0441 0757-0280 0757-0441	3	R:FXO MET FLM 2.87K DHM L& 1/8W R:FXO MET FLM 19.6K DHM L% 1/8W R:FXD MET FLM 8.25K DHM L% 1/8W R:FXD MET FLM 1K DHM 1% 1/8W R:FXD MET FLM 8.25K DHM 1% 1/8W	28480 28480 28480 28480 28480 28490	0698-3151 0698-3157 0757-0441 0757-0280 0757-0441
A107R47	0757-0280	2	R:FXD MET FLM 1K CHM 1% 1/8W	28480	0757-0280
A107R48	0757-0401		R:FXD MET FLM 100 OHM 1% 1/8W	28480	0757-0401
A107R49	0698-3446		R:FXD MET FLM 383 OHM 1% 1/8W	28480	0698-3446
A107R50	0698-3446		R:FXD MET FLM 383 OHM 1% 1/8W	28480	0698-3446
A107R52	0698-3444		R:FXD MET FLM 316 OHM 1% 1/8W	28480	0698-3444
A107R53	C698-3444		R:FXD MET FLM 316 OHM 1% 1/8W	2 84 80	0698-3444
A107R54	0698-0082		R:FXD MET FLM 464 OHM 1% 1/8W	284 80	0698-0082
A107R55	0698-0082		R:FXD MET FLM 464 OHM 1% 1/8W	284 80	0698-0082
A107R56	0698-0082		R:FXD MET FLM 464 OHM 1% 1/8W	284 80	0698-0082
A107R57	0698-0082		R:FXD MET FLM 464 OHM 1% 1/8W	284 80	0698-0082
A107R58 A107R59 A107R60 A107R61 A107R62	0698-3444 0698-3444 0757-0280 0757-0284 0698-0083	1 5	R:FXD MET FLM 316 GHM 1% 1/8W R:FXD MET FLM 316 OHM 1% 1/8W R:FXD MET FLM 1K CHM 1% 1/8W R:FXD MET FLM 150 OHM 1% 1/8W R:FXD MET FLM 1.96K OHM 1% 1/8W	28480 28480 28480 28480 28480	0698-3444 0698-3444 0757-0280 0757-0284 0698-0083
A107R63	0698-0083	2	R:FXD MET FLM 1.96K OHM 1% 1/8W	28480	0698-0083
A107R64	0698-0083		R:FXD MET FLM 1.96K OHM 1% 1/8W	28480	0698-0083
A107R65	0698-0083		R:FXD MET FLM 1.96K OHM 1% 1/8W	28480	0698-0083
A107R66	0698-3151		R:FXD MET FLM 2.87K OHM 1% 1/8W	28480	0698-3151
A107R67	2100-1738		R:YAR FLM 10K OHM 10% LIN 1/2W	28480	2100-1738
A107R68	2100-1738		R:VAP FLM 10K OHM 10% LIN 1/2W	28480	2100-1738
A107R69	0757-0401		R:FXD MET FLM 100 OHM 1% 1/8W	28480	0757-0401
A107R70	0698-3157		R:FXD MET FLM 19-6K OHM 1% 1/8W	28480	0698-3157
A107R71	0698-3151		R:FXD MET FLM 2.87K OHM 1% 1/8W	28480	0698-3151
A107R72	0698-3157		R:FXD MET FLM 19-6K OHM 1% 1/8W	28480	0698-3157
\$107R73 \$107R74 \$107R75 \$107K76 \$107K77	0698-3151 0698-3157 0698-0083 0698-3444 0757-0441		R:FXD MET FLM 2.87K OHM 1% 1/8W R:FXD MET FLM 19.6K OHM 1% 1/8W R:FXD MET FLM 1.96K OHM 1% 1/8W R:FXD MET FLM 316 OHM 1% 1/8W R:FXD MET FLM 8.25K OHM 1% 1/8W	28480 28480 28480 28480 28480 28480	0698-3151 0698-3157 0698-0083 0698-3444 0757-0441
A107R78	0757-0280		R:FXD MET FLM 1K UHM 1% 1/8W	28480	0757-0290
A107K79	0698-0082		R:FXD MET FLM 464 OHM 1% 1/8W	28480	0698-0082
A107R80	C698-0082		R:FXD MET FLM 464 CHM 1% 1/8W	28480	0698-0082
A107R81	0698-0082		R:FXD MET FLM 464 OHM 1% 1/8W	28480	0698-0082
A107R82	C698-0082		R:FXO MET FLM 464 OHM 1% 1/8W	28480	0698-0082
A107R83	0757-0280		R:FXO MET FLM 1K OHM 1% 1/8W	28480	0757-0280
A107R84	0698-3444		R:FXO MET FLM 316 OHM 1% 1/8W	28480	0698-3444
A107R85	0698-3444		R:FXD MET FLM 316 OHM 1% 1/8W	28480	0698-3444
A107R86	0698-3444		R:FXD MET FLM 316 OHM 1% 1/8W	28480	0698-3444
A107R87	0698-0082		R:FXD MET FLM 464 OHM 1% 1/8W	28480	0698-0082
A107R88	0698-0082	1	R:FXD MET FLM 464 OHM 1% 1/8W	28480	0698-0092
A107R89	0757-0280		R:FXD MET FLM 1K DHM 1% 1/8W	28480	0757-0280
A107R90	0757-0316		R:FXD MET FLM 42.2 DHM 1% 1/8W	28480	0757-0316
A107R91	0757-0401		R:FXD MET FLM 100 OHM 1% 1/8W	28480	0757-0401
A107R92	0757-0280		R:FXD MET FLM 1K DHM 1% 1/8W	28480	0757-0280
A107R93 A107R94 A107R96 A107R97 A107R98	0757-0274 0757-0274 0698-3442 0757-0280 0757-0416	2	R:FXD MET FLM 1.21K OHM 1% 1/8W R:FXD MET FLM 1.21K OHM 1% 1/8W R:FXD MET FLM 237 OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W R:FXD MET FLM 1K OHM 1% 1/8W	284 80 284 80 284 80 284 80 284 80	0757-0274 0757-0274 0698-3442 0757-0280 0757-0416
A107R99	0757-0416		R:FXO MET FLM 511 OHM 1% 1/8W	28480	0757-0416
A107R101	0698-3442		R:FXO MET FLM 237 OHM 1% 1/8W	28480	0698-3442
A107R102	0698-0082		R:FXO MET FLM 464 OHM 1% 1/8W	28480	0698-0082
A107R103	0757-0416		R:FXO MET FLM 511 OHM 1% 1/8W	28480	0757-0416
A107R104	0698-0082		R:FXO MET FLM 464 OHM 1% 1/8W	28480	0698-0082

Table 4-21. A107 Data Control Card, Replaceable Parts (Continued)

Designation	HP Part Number	Qty	Description	Mfr Code	Mfr Part Number
A107R105 A107R106 A107R107 A107R108 A107R109	0698-3438 0698-3445 0757-0416 0757-0280 0698-3132	1 9 2	R:FXO MET FLM 147 OHM 1% 1/8W R:FXO MET FLM 348 OHM 1% 1/8W R:FXO MET FLM 511 OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXO FLM 261 OHM 1% 1/8W	28480 28480 28480 28480 28480 28480	D698-3438 0698-3445 0757-D416 D757-0280 D698-3132
A107R110 A107R111 A107R112 A107R113 A107R114	0698-3445 0698-3445 0698-3445 0698-3445 0698-3445		R:FXO MET FLM 348 OHM 1% 1/8W R:FXO MET FLM 348 OHM 1% 1/8W R:FXO MET FLM 348 OHM 1% 1/8W R:FXO MET FLM 348 OHM 1% 1/8W R:FXO MET FLM 348 OHM 1% 1/8W	28480 28480 28480 28480 28480 28480	0698-3445 0698-3445 0698-3445 0698-3445 0698-3445
A107R115 A107R116 A107R117 A107R118 A107R119	0698-3445 D698-3445 D698-3445 D757-D28D D698-3132		R:FXO MET FLM 348 OHM 1% 1/8W R:FXO MET FLM 348 DHM 1% 1/8W R:FXO MET FLM 348 OHM 1% 1/8W R:FXO MET FLM 1K OHM 1% 1/8W R:FXO FLM 261 OHM 1% 1/8W	2848D 2848D 2848D 2848D 2848D	0698-3445 0698-3445 0698-3445 0757-0280 0698-3132
A107S1 A107U11 A107U12 A1D7U13 A107U14	3101-1213 1820-0971 1820-0435 1820-0301 1820-0971	1 8 2 4	SWITCH:TOGGLE OPST-OB SUB-MINIATURE IC:CTL DUAL 2W-2-INPT ANO/OR GATE IC:TTL 8-BIT DDO/EVEN GEN./CHECKER IC:TTL QUAO BI-STABLE D-LATCH IC:CTL DUAL 2W-2-INPT ANO/OR GATE	8164D 07263 01295 01295 01263	T8001 U6A997179X SNT418DN SNT475N U6A997179X
A107U16 A107U17 A107U21 A107U22 A107U23	1820-0485 1820-0233 1820-0971 1820-0301 1820-0616	3 4 4	IC:CTL HEX LEVEL RESTDRER IC:TTL SYNUP-ON 4-BIT BINARY CDUNTER IC:CTL DUAL 2W-2-INPT AND/OR GATE IC:TTL QUAO BI-STABLE D-LATCH IC:TTL 4-BIT 2-INPT MULTIPLEXER	07263 01295 07263 01295 07263	U6B9B1649X SN74193N U6A997179X SN7475N U78932259X
A107U24 A107U25 A107U26 A107U27 A107U32	1820-0971 1820-0301 1820-0485 1820-0233 1820-0616		IC:CTL DUAL 2W-2-INPT AND/OR GATE IC:TTL QUAO BI-STABLE D-LATCH IC:CTL HEX LEVEL RESTORER IC:TTL SYNUP-DN 4-BIT BINARY COUNTER IC:TTL 4-BIT 2-INPT MULTIPLEXER	07263 01295 07263 01295 07263	U6A997179X SN7475N U6B981649X SN74193N U78932259X
A107U35 A107U36 A107U37 A107U42 A107U43	1820-0616 1820-0971 1820-0233 1820-0140 1820-0207	1 3	IC:TTL 4-BIT 2-INPT MULTIPLEXER IC:CTL DUAL 2M-2-INPT AND/OR GATE IC:TTL SYNUP-DN 4-BIT BINARY COUNTER IC:TTL DUAL 4-INPT AND BUFFER IC:TTL MONDSTABLE MULTIVIBRATOR	07463 07463 01295 04/13 26480	U78932259X U6A997179X SN74193N MC3D26P 182D-D207
A107U44 A107U45 A107U46 A1D7U47 A107U53	1820-0424 1820-0376 1820-0971 1820-0233 1820-0207	2	IC:TTL HS HEX INVERTER IC:TTL DUAL 4-INPT NAND PDWER GATE IC:CTL DUAL 2W-2-INPT AND/OR GATE IC:TTL SYNUP-DN 4-BIT BINARY COUNTER IC:TTL MONDSTABLE MULTIVIBRATDR	04/13 01/295 07/263 01/295 26/48D	SN74HD4N SN74H40N U6A9971T9X SN74193N 1820-D2D7
A107U54 A107U55 A107U56 A1D7U57 A107U63	182D-D966 182D-D3D1 1820-D435 1820-02D5 182D-0207	3	IC:CTL DUAL 2-INPT AND 2W AND/OR GATE IC:TTL QUAO BI-STABLE D-LATCH IC:TTL 8-BIT DDD/EVEN GEN./CHECKER IC:TTL QUAO 2-INPT OR GATE IC:TTL QUAO 2-INPT OR GATE IC:TTL MONOSTABLE MULTIVIBRATOR	14433 01295 01295 25480 25480	MIC 966 SN7475N SN74180N 1820-0205 1820-0207
A107U64 A107U65 A107U66 A107U67 A107U73	1820-0328 1820-0616 1820-0971 1820-0485 1820-0372	1	IC:TTL QUAO 2-INPT NDR GATE IC:TTL 4-BIT 2-INPT MULTIPLEXER IC:CTL DUAL 2W-2-INPT ANO/OR GATE IC:CTL HEX LEVEL RESTDRER IC:TTL TRIPLE 3-INPT ANO GATE	04/13 07/63 07/63 07/63 28480	SN74D2N U78932259X U6A997179X U6B981649X 1820-D372
A107U74(NOTE 1) A107U76 A107U81 A107U82 A107U83	1820-0451 1820-0187 1820-037D 1820-0141 1820-0205	3 2 2 2	IC:TTL DUAL J-K F/F IC:CTL DUAL 2-INPT NDR GATE IC:TTL HS QUAD 2-INPT NAND GATE IC:TTL QUAO 2-INPT NANO GATE IC:TTL QUAO 2-INPT DR GATE	D47 13 072 63 D12 95 D4/13 25-80	MC3062P U6A985249X SN74HDDN MC3001P 182D-0205
A1D7U84 A1D7U85 A1D7U86 A107U91 A107U92	1820-0186 1820-0971 1820-0187 1820-0371 1820-0371	2	IC:CTL DUAL 2-INPT AND GATE IC:CTL DUAL 2W-2-INPT AND/DR GATE IC:CTL DUAL 2-INPT NDR GATE IC:TTL HS TRIPLE 3-INPT NAND GATE IC:TTL HS TRIPLE 3-INPT NAND GATE	07/63 07/63 07/63 01/95 01/95	U6A985649X U6A997179X U6A985249X SN74H10N SN74H10N
A107U93 A107U95 A107U96 A107U101 A107U102(NOTE 1	1820-0424 1820-0141 1820-0482 1820-0370 1820-0451	1	IC:TTL HS HEX INVERTER IC:TTL QUAO 2-INPT AND GATE IC:CTL 1 DF 8 OECODER IC:TTL HS QUAD 2-INPT NANO GATE IC:TTL OUAL J-K F/F	047:13 047:13 072:63 012:95 047:13	SN74H04N MC3001P U6B983849X SN74H00N MC3062P
#107U103 #107U104 #107U105(NOTE 1 #107U1D6 #107W1	1820-0619 1820-0186 1820-0451 1820-0205 5080-0058	1	IC:TTL HS OUAL 4-INPT NANO GATE(DPEN C) IC:CTL OUAL 2-INPT AND GATE IC:TTL OUAL J-K F/F IC:TTL QUAD 2-INPT OR GATE CDNOUCTDR ASSY	D1至95 07至63 04年13 28年80 28年80	SN74H22N U6A985649X MC3D62P 182D-0205 5080-0058

REF.				* IV	DICATES SI	GNAL SOURCE	
NO.		BACKPLANE I	LOCATION				
A107							
22	A1-78* A107-69	A3-81	A7-56	A8-42	A9-76	A24-64	
32	A6-73*	A9-36*	A24-55*	A107-76			
35	A3-25	A24-76	A107-81#				
256	A8-76	A107-78*					
258	A3-29	A24-78	A107-77*				
272	A102-5*			A110-5*			
289	A107-84#	A101-54,5	7 AlØ4-54,	57 Al09-54	•57 All2-5	54,57	
290	A102-6			A110-6			
291	A107-28*				,58 All2-5		
334	A1-54*	A3-28#	A4-27	A9-31*	A24-77#	A107-72	
335	A1-8*	A2-7Ø	A4-30	A6-9	A7-20	A8-75	
	A107-82						
376	A6-74*	A9-34*	A24-57#	A107-75			
394	A102-72*	A103-72*	A107-71	A110-72*	A111-72#		
431	A1-53*	A3-22*	A8-6Ø	A9-35#	A24-42*	A107-66	
432	A3-30*	A4-59*	A9-41*	A107-74			
477	A3-53*	A9-38*	A24-73	A107-73			
493	A107-65*	A101-30,3	B A104-30,	38 A109-30	,38 All2-3	30,38	
494	A107-64*	A101-29,3	4 A104-29,	34 A109-29	,34 A112-2	29,34	



FF DEFINITIONS

DLP = DELAY PULSE

= DATA READY TIME = MEMORY BUSY

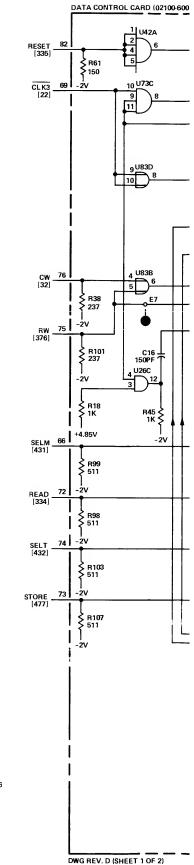
MRTY = MEMORY READ TIME Y DRIVE LINE MRTX = MEMORY READ TIME X DRIVE LINE

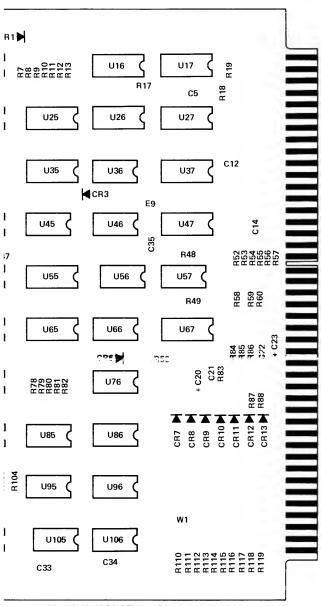
MSG = MEMORY SENSE GATE

MST = MEMORY STROBE TIME PB = PARITY BIT

NOTES:

- RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.
- ALL PIN NUMBERS REFER TO 86-PIN CONNECTOR UNLESS OTHERWISE INDICATED.
- NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.
- PIN 5 OF U11, U14, U21, U24, U36, U46, U54, U66 AND U85 IS NORMAL GROUND CONNECTION AND IS NOT SHOWN ELSEWHERE ON THIS DIAGRAM.
- 5. R17 IS 464 OHMS ON CARD REV. 1132.





AM ALSO APPLIES TO CARD REV. 1132.

FF DEFINITIONS

DLP = DELAY PULSE

= DATA READY = DATA READY TIME

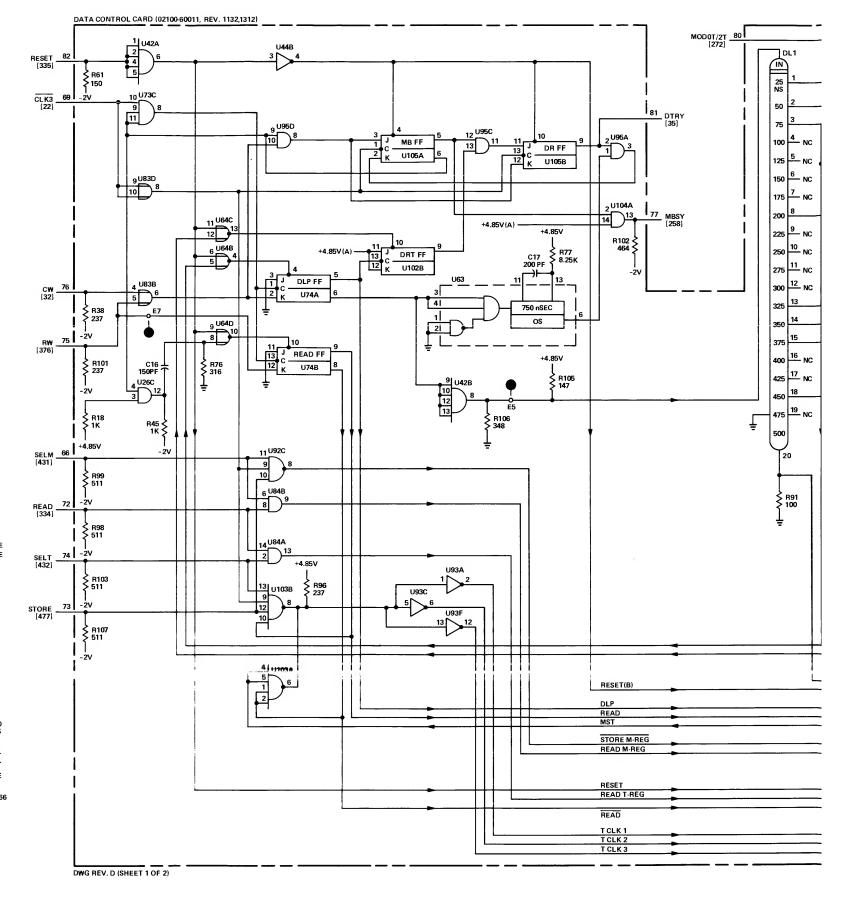
MB = MEMORY BUSY
MRTY = MEMORY READ TIME Y DRIVE LINE

MRTX = MEMORY READ TIME X DRIVE LINE

MSG = MEMORY SENSE GATE
MST = MEMORY STROBE TIME
PB = PARITY BIT

NOTES:

- RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.
- ALL PIN NUMBERS REFER TO 86-PIN CON-NECTOR UNLESS OTHERWISE INDICATED.
- NUMERALS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.
- PIN 5 OF U11, U14, U21, U24, U36, U46, U54, U66 AND U35 IS NORMAL GROUND CONNECTION AND IS NOT SHOWN ELSEWHERE ON THIS DIAGRAM.
- 5, R17 IS 464 OHMS ON CARD REV. 1132.



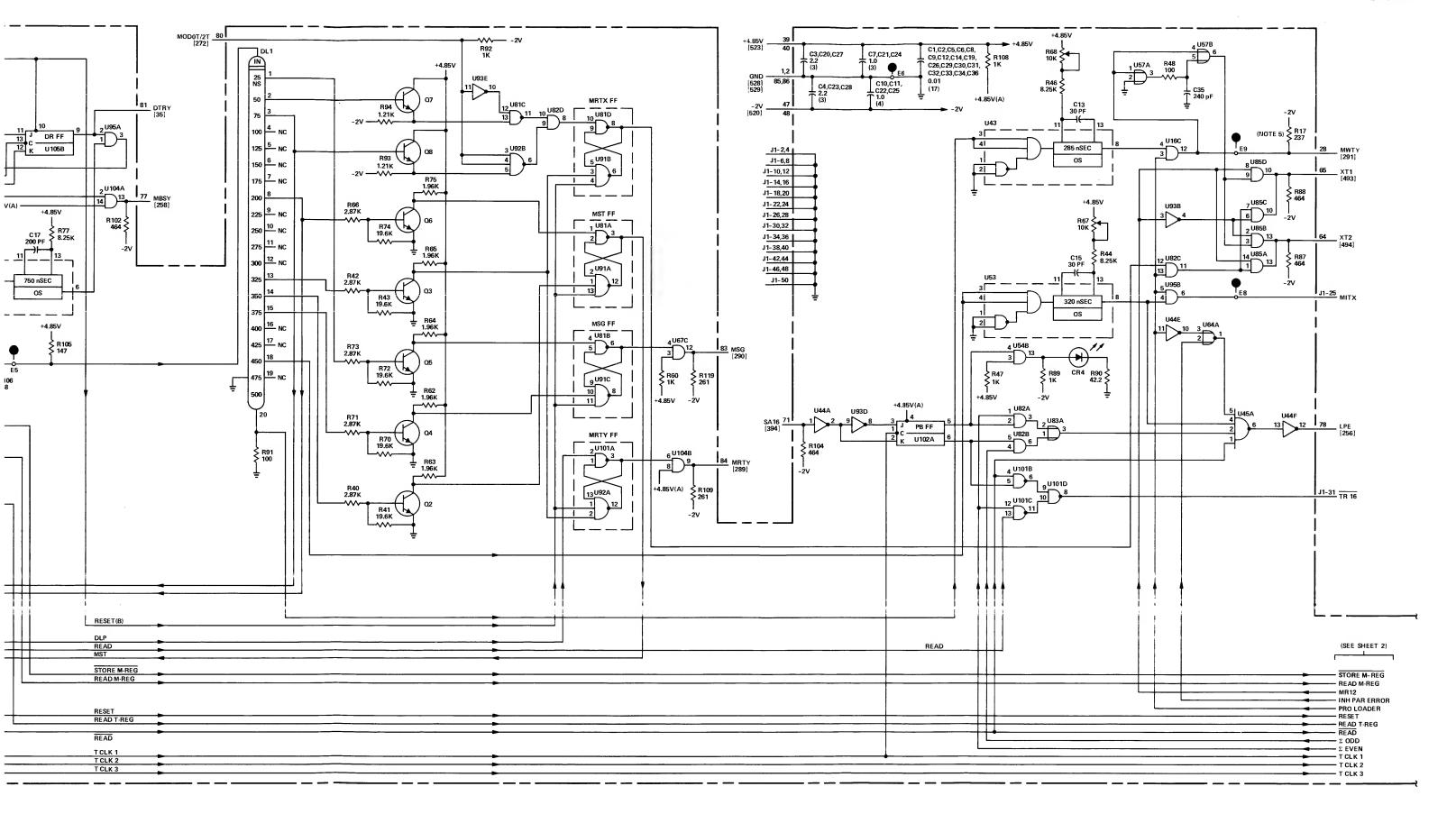
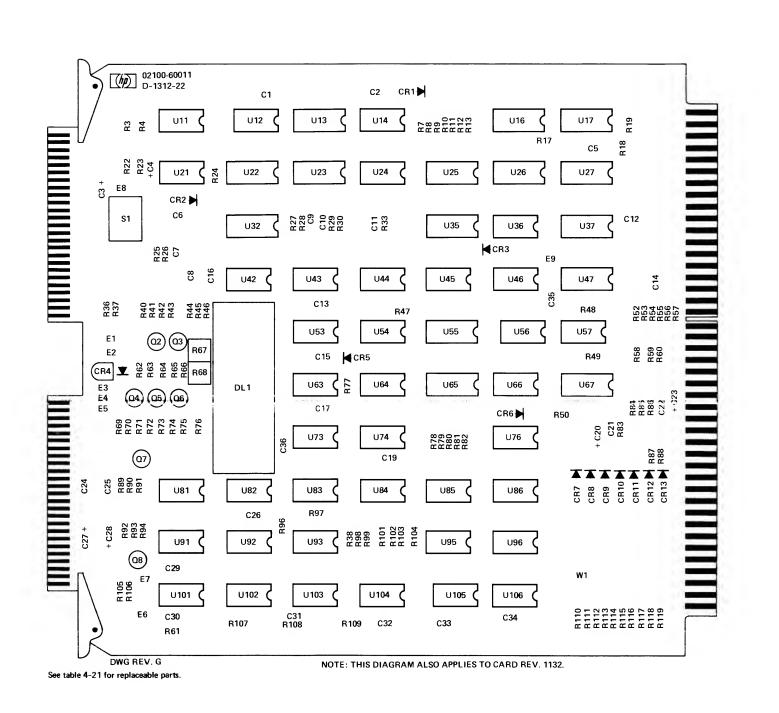
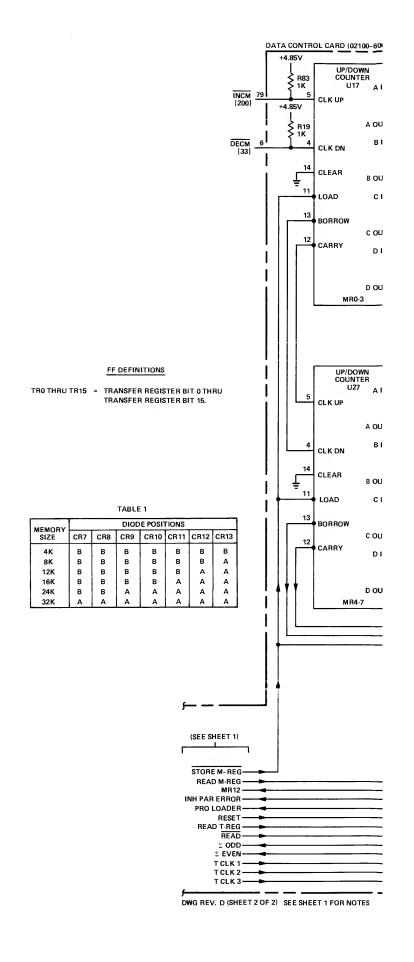


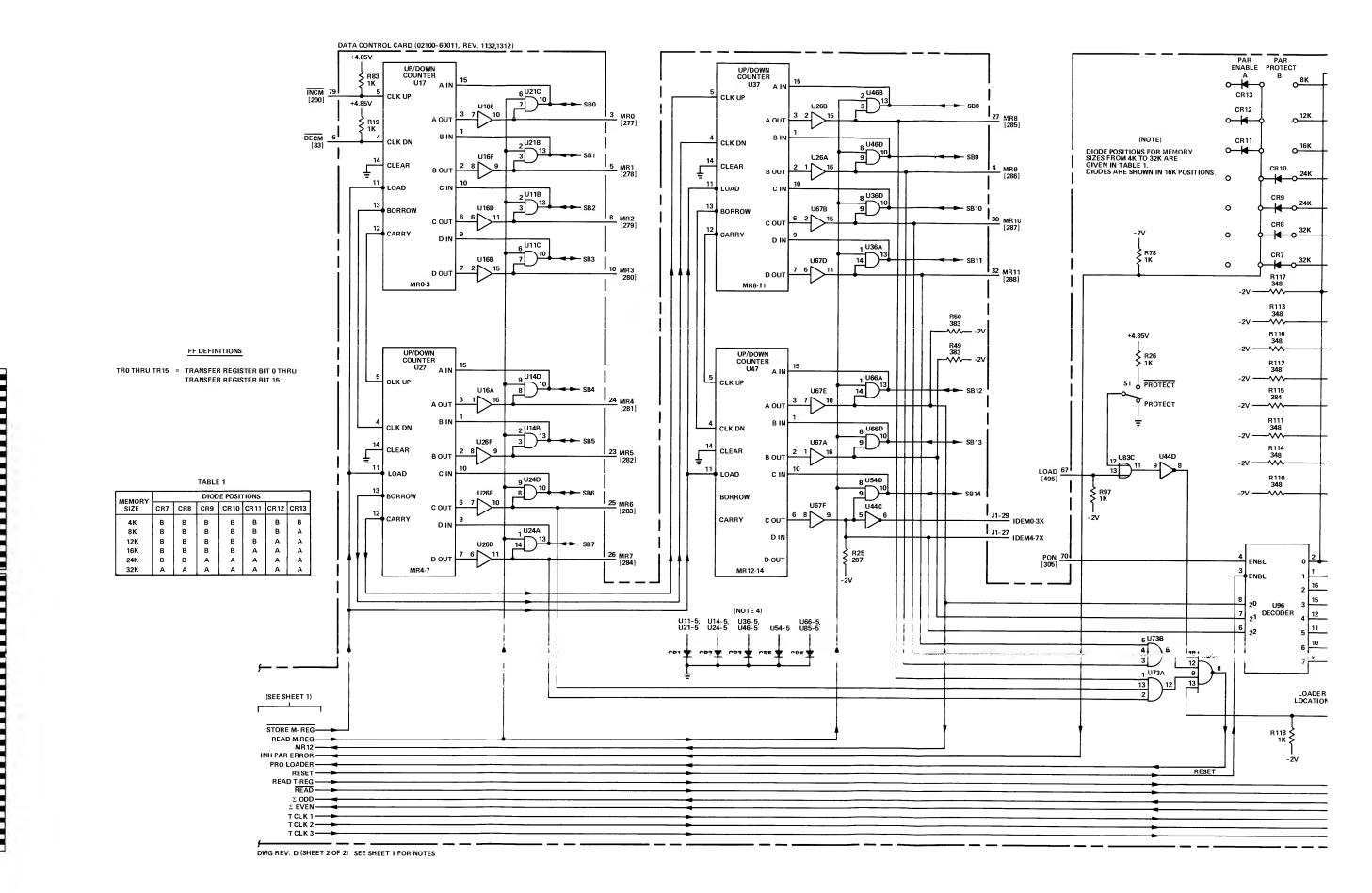
Figure 4-25. A107 Data Control Card, Parts Location and Schematic Diagrams (Sheet 1 of 2)

2100A Section IV

REF.				* IN	DICATES SI	GNAL SOURCE	
NO.		BACKPLANE	LOCATION				
A107							
33	A1-42	A24-60#	A107-6				
200 260	A1-37 A103-3	A24-33#	A107-79				
261	A103-3 A103-4	A107-68* A107-63*					
262	A102-3	A107-55#					
263	A102-4	A107-56#					
264	A107-57*	A110-3					
265 266	A107-58* A107-54*	A110-4 A111-3					
267	A107-53*	A111-4					
268	A104-46	A107-59#					
269	A101-46	A107-60*					
270 271	A107-62* A107-61*	A109-46 A112-46					
277	A101-35	A104-35	A107-3*	A109-35	A112-35		
278	A101-36	A104-36	A107-5*	A109-36	A112-36		
279	A101-37	A104-37	A107-8*	A109-37	A112-37		
280	A101-33	A104-33	A107-10*	A109-33	A112-33		
281 282	A101-32 A101-31	A104-32 A104-31	A107-24* A107-23*	A109-32 A109-31	A112-32 A112-31		
283	A101-49	A104-49	A107-25*	A109-49	A112-49		
284	A101-52	A104-52	A107-26#	A109-52	A112-52		
285	A101-51	A104-51	A107-27*	A109-51	A112-51		
286 287	A101-53 A101-56	A104-53 A104-56	A107-4* A107-30*	A109-53 A109-56	A112-53 A112-56		
288	A101-55	A104-55	A107-30*	A109-55	A112-55		
305	A1-6	A7-8#	A24-67	A104-42	A107-70		
		RU A23-66					
378	A102-15*	A103-15#	A107-13	A110-15*	A111-15#		
379 380	A102-18* A102-17*	A103-18* A103-17*	4107-11 4107-7	A110-18* A110-17*	A111-18* A111-17*		
381	A102-20*	A103-20*	A107-9	A110-20#	A111-20#		
382	A102-19#	A103-19#	A107-17	A110-19#	A111-19#		
383	A102-22*	A103-22#	A107-15	A110-22*	A111-22#		
384 385	A102-21* A102-63*	A103-21* A103-63*	A107-19 A107-21	A110-21* A110-63*	A111-21* A111-63*		
386	A102-64*	A103-64#	A107-31	A110-64#	A111-64#		
387	A102-65#	A103-65#	A107-33	A110-65#	A111-65#		
388	A102-66*	A103-66*	A107-35	A110-66#	A111-66*	•	
389	A102-67#	A103-67*	A107-37	A110-67# A110-68#	A111-67#		
39Ø 391	A102-68# A102-69#	A103-68* A103-69*	A107-41 A107-43	A110-69*	Alll-68* Alll-69*		
392	A102-70*	A103-70*	A107-45	A110-70#	A111-70*		
393	A102-71*	A103-71*	A107-49	A110-71*	A111-71*		
396	A2-46#	A5-78*	A6-32	A7-62*	A8-3*	A9-16*	
397	A107-16 A2-44#	A5-80*	A6-60	A7-61#	A8-4*	A9-14#	
37.	A107-18			H. 01			
398	A2-29*	A5-76#	A6-61	A7-60*	A8-5*	A9-18#	
200	A107-12	45 505	44 22	47 508	40 (#	40.12#	
399	A2-30* A107-14	A5-59#	A6-33	A7-59#	A8-6*	A9-13*	
400	A2-19#	A5-52#	A6-65	A7-64#	A8-7#	A9-12*	
	A107-29						
401	A2-20*	A5-51*	A6-64	A7-57#	48-8#	A9-10*	
402	A107-38 A2-12*	A5-49#	A6-67	A8-9*	A9-20*	A107-20	
403	A2-9#	A5-43*	A6-66	A8-24*	A9-11#	A107-22	
404	A2-53+	A5-31#	A6-52	A8-14*	A9-5#	A107-44	
405	A2-54+	A5-32#	A6-51	A8-18#	A9-3#	A107-46	
406	A2-43*	A5-29*	A6-54	A8-19#	49-9#	A107-34	
407 408	A2-49* A2-31*	A5-30* A5-10*	A6-53 A6-38	A8-20* A8-21*	A9-7* A9-8*	A107-36 A107-51	
409	A2-31 #	A5-8*	A6-37	A8-22*	A9=4#	A107-42	
410	A2-10+	A5-6#	A6-42	A8-23#	A9-6*	A107-50	
411	A1-14	A2-11*	A4-75	A5-4#	A6-41	A8-33*	
495	A9-84#	A107-52 A107-67					
470	A24-9*	-101-01					







W1

U17

U27

U37

U47

R48

U57

U67

R50

R49

C20 C21 R83

R110 R111 R112 R113 R114 R115 R117 R117

E9

C5

C12

R52 R53 R54 R55 R55

R58 R59 R60

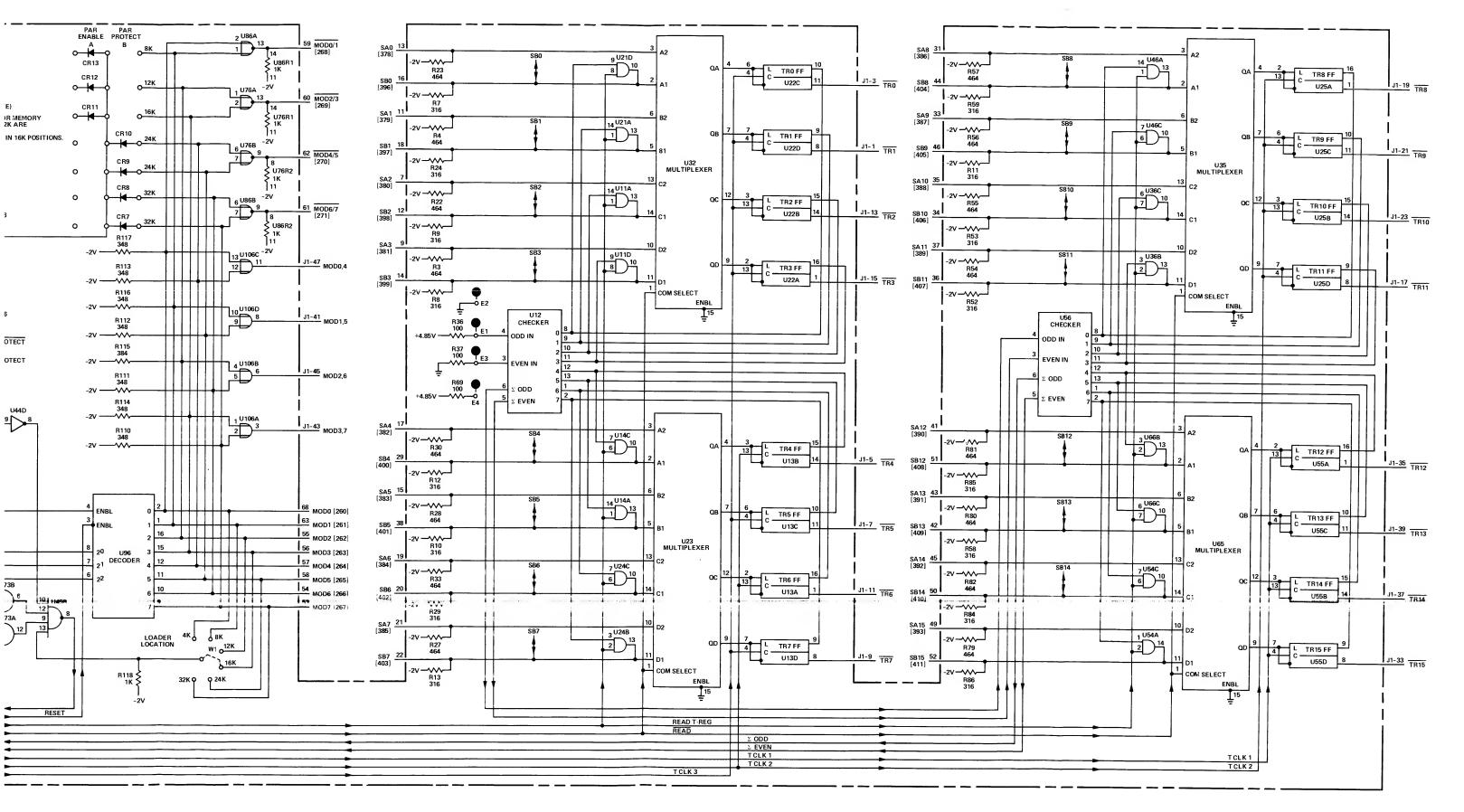


Figure 4-25. A107 Data Control Card, Parts Location and Schematic Diagrams (Sheet 2 of 2)

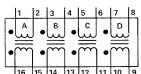
```
* INDICATES SIGNAL SOURCE
REF.
            BACKPLANE LOCATION
NO.
A108 (16K)
60 A108-4
                A108-5
      A108-10* A110-25
129
     A108-7#
                A110-27
130
131
      A108-8*
                A110-29
      A108-9*
                A110-31
132
133
      A108-37*
                A110-33
      A108-32#
                A110-35
134
                A110-37
135
      A108-33#
136
      A1Ø8-34#
                A110-41
      A108-31*
                A110-43
137
      A108-46*
                A110-45
138
139
      A108-49*
                A110-49
                A110-51
      A108-50*
140
      A108-61#
                A110-53
141
                 A110-55
142
      A108-69#
      A108-70*
                A110-57
143
                 A110-59
144
      A108-71*
145
      A1Ø8-15*
                 A110-61
                 A110-26
146
      A108-14*
147
      A108-11*
                 A110-28
                 A110-30
148
      A108-12*
                A110-32
      A108-13*
149
150
      A108-38*
                 A110-34
      A108-43*
                 A110-36
151
                 A110-38
      A108-41#
152
153
      A108-42*
                 A110-42
154
      A108-72*
                 A110-44
                 A110-46
155
      A108-68*
      A108-66*
                 All0-50
156
      A108-67#
                 A110-52
157
                 A110-54
      A108-65*
158
159
      A108-62*
                 A110-56
      A108-63#
                A110-58
160
                 A110-60
      A108-64#
161
      A108-16#
                 A110-62
162
                 A111-25
      A108-26*
163
      A108-19#
                 A111-27
164
      A108-25*
                 A111-29
165
      A108-24*
                 A111-31
166
167
      A108-53*
                 A111-33
      A108-60*
                 A111-35
168
                 A111-37
169
      A108-59*
      A108-58*
                 A111-41
170
      A108-52*
                 A111-43
171
      A108-44*
                 A111-45
172
      A108-51#
                 A111-49
173
                 A111-51
174
      A108-45*
175
      A108-76*
                 A111-53
      A108-73#
                 A111-55
176
                 A111-57
       A108-74#
177
178
      A108-75*
                 A111-59
      A108-17#
                 A111-61
179
                 A111-26
       A108-20#
180
181
       A108-23*
                 A111-28
       A108-22*
                 A111-30
 182
                 A111-32
183
       A108-21*
       A108-57*
                 A111-34
184
       A108-54*
                 A111-36
185
                 A111-38
 186
       A108-56#
       A108-55*
                 A111-42
 187
                 A111-44
       A108-78#
 188
                 A111-46
 189
       A108-79#
       A108-81*
                 A111-50
 190
                 A111-52
       A108-80*
 191
                 A111-54
 192
       A108-84*
       A108-77#
                 A111-56
 193
                 A111-58
       A108-83*
 194
                 A111-60
 195
       A108-82*
       A108-18#
                 A111-62
 196
```

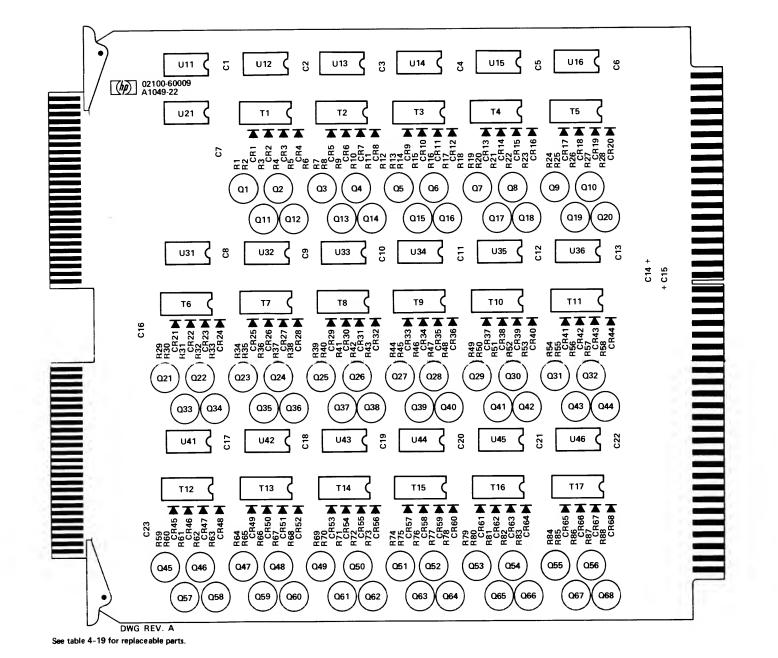
NOTES:

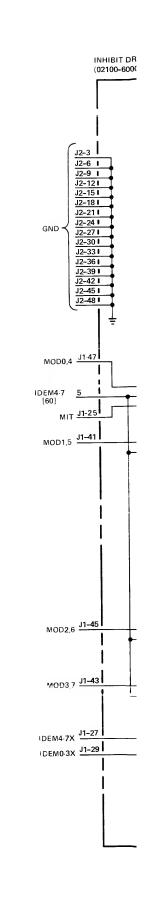
- RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED.

 ALL PIN NUMBERS REFER TO 86-PIN CONNECTOR UNLESS OTHERWISE SPECIFIED.

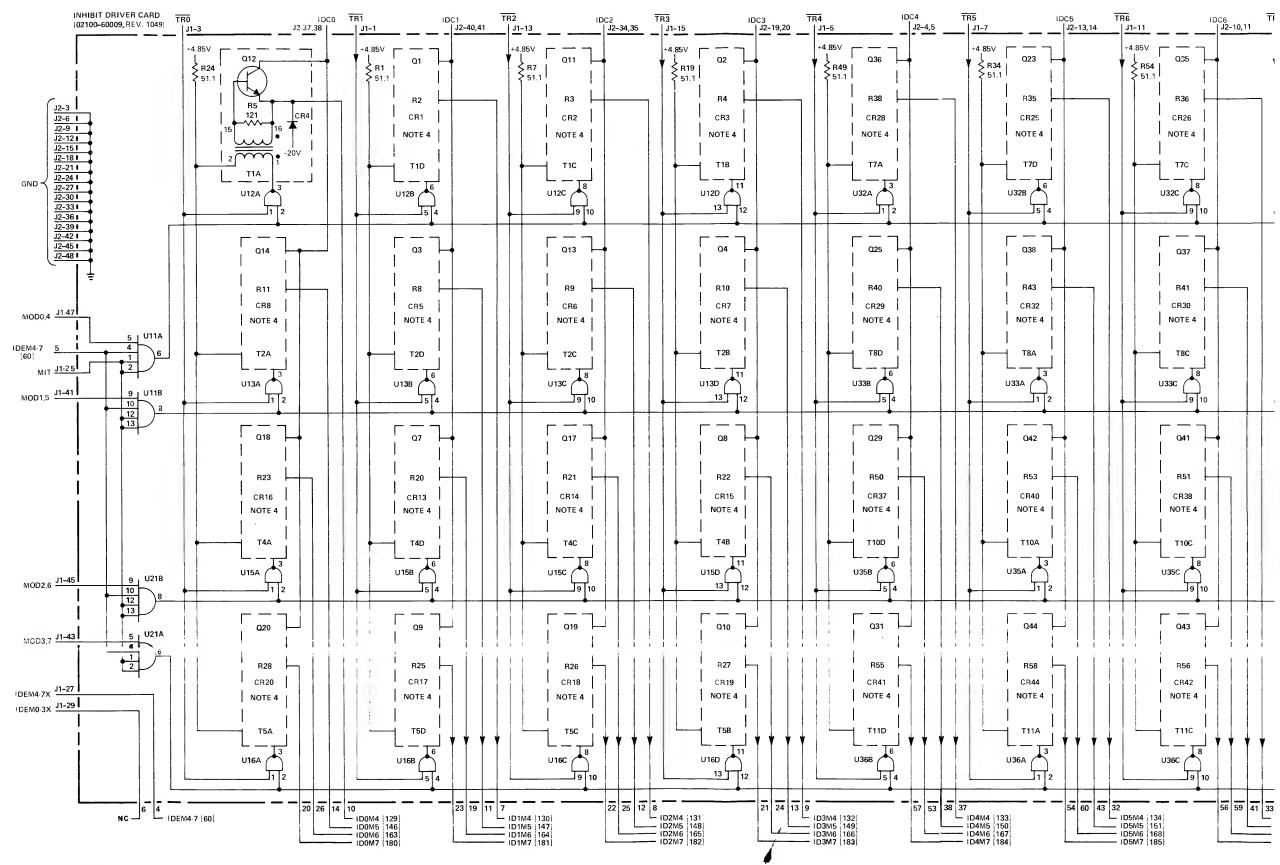
 NUMBERS WITHIN BRACKETS [] ARE WIRING LIST REFERENCE NUMBERS.
- NUMBERS.
 4. SEE TYPICAL CIRCUIT AT UPPER LEFT CORNER.
- 5. SCHEMATIC DIAGRAM OF T1 THRU T17.







DWG. REY



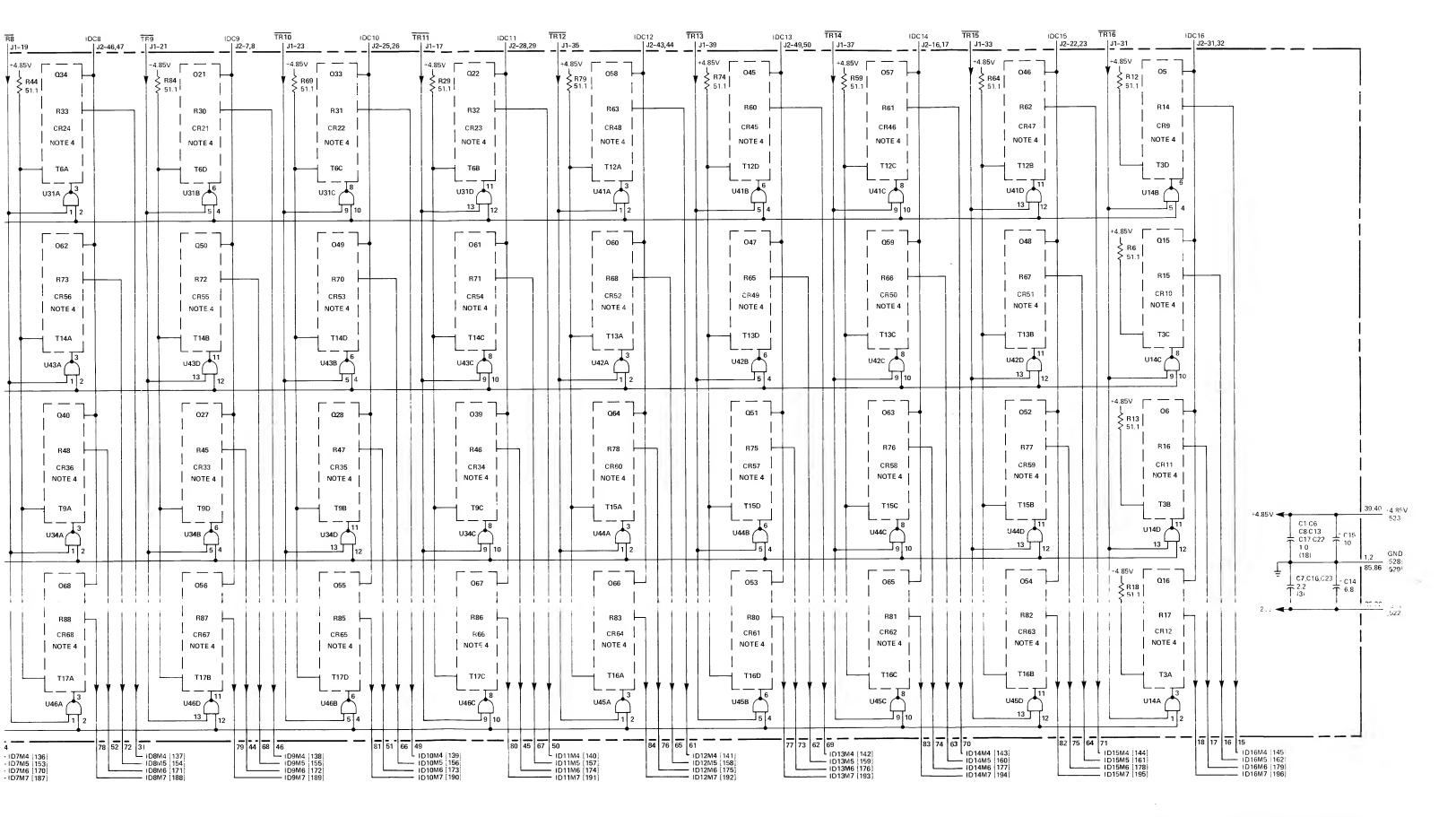
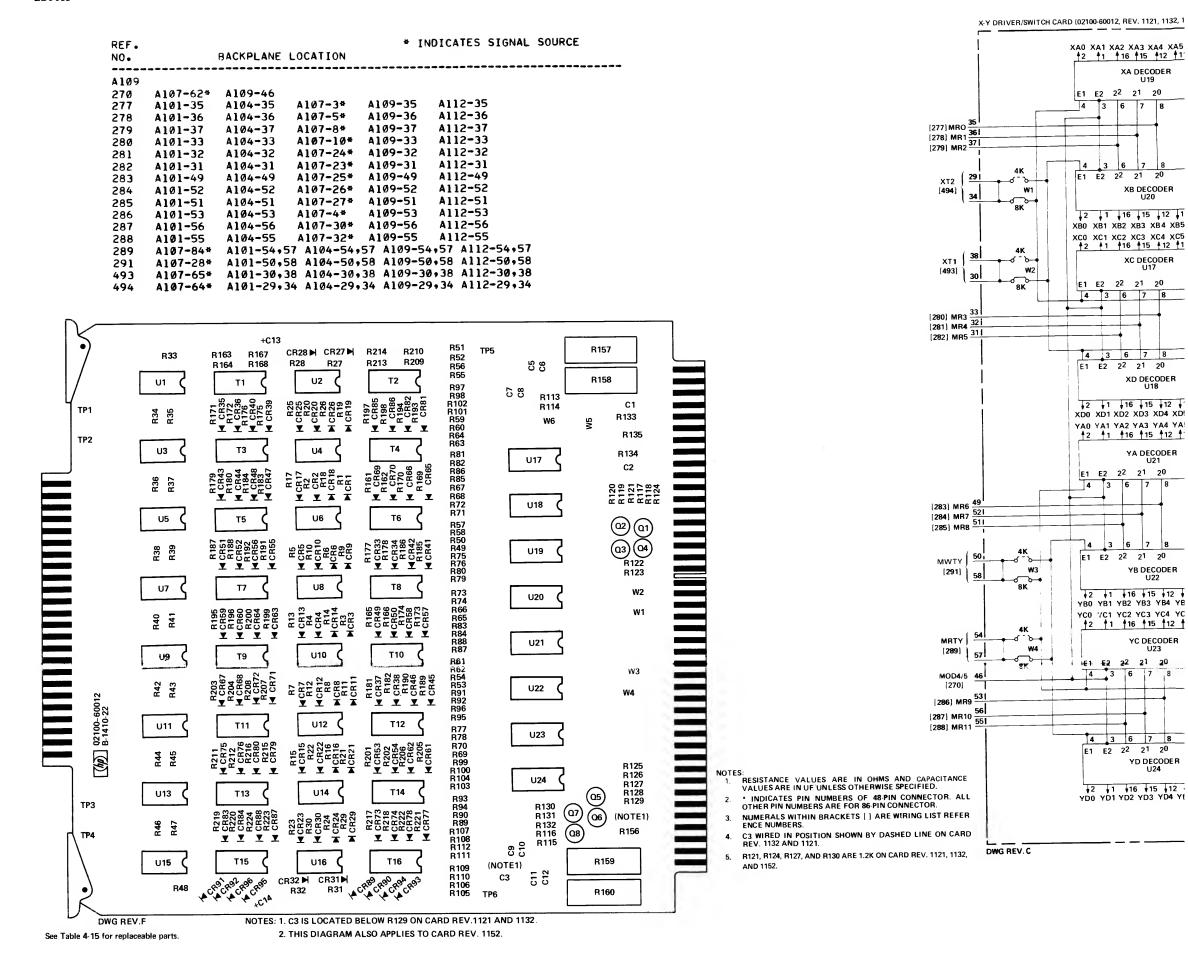


Figure 4-26. A108 Inhibit Driver Card (16K), Parts Location and Schematic Diagrams



XA DECODER U19

XB DECODER

XC DECODER U17

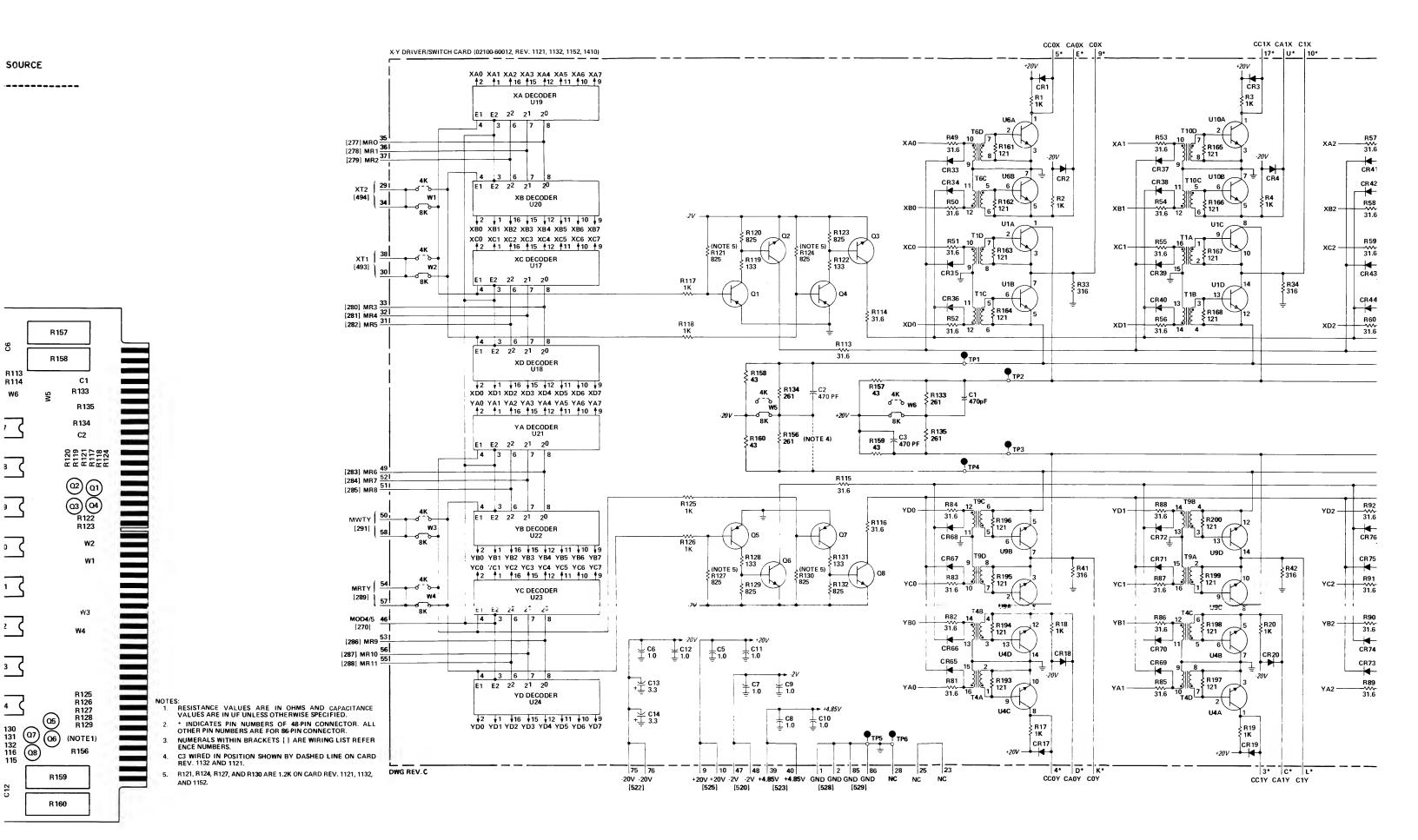
XD DECODER U18

YA DECODER U21

YB DECODER

YC DECODER

YD DECODER



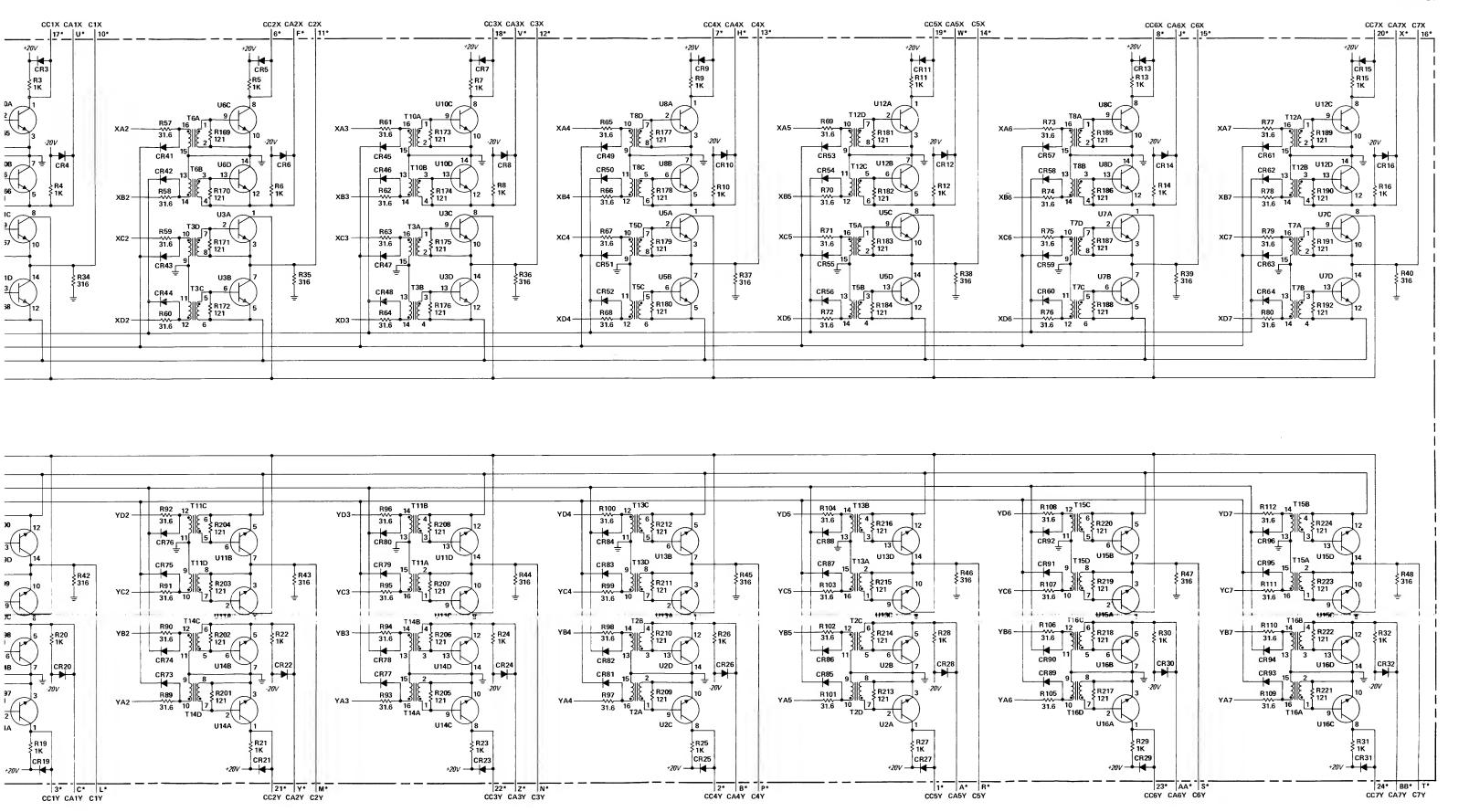


Figure 4-27. A109 X-Y Driver/Switch Card, Parts Location and Schematic Diagrams

2100A Section IV

REF.		BACKPLANE	LOCATION	* I	NDICATES	SIGNAL	SOURCE
A110							
129	A108-10#	A110-25					
130	A108-7*	A110-27					
131	A108-8*	A110-29					
132	A108-9*	A110-31					
133	A108-37*	A110-33					
134	A108-32*	A110-35					
135 136	A108-33*	A110-37					
136	A108-34* A108-31*	A110-41 A110-43					
138	A108-46*	A110-45					
139	A108-49#	A110-49					
140	A108-50#	Al10-51					
141	A108-61*	A110-53					
142	A108-69*	A110-55					
143	A108-70*	A110-57					
144 145	A108-71*	A110-59					
145	A108-15# A108-14#	All0-61 All0-26					
147	A108-11*	A110-28					
148	A108-12*	A110-30					
149	A108-13#	A110-32					
150	A108-38*	A110-34					
151	A108-43#	A110-36					
152	A108-41#	Al10-38					
153 154	A108-42# A108-72#	All0-42 All0-44					
155	A108-68*	A110-44 A110-46					
156	A108-66*	A110-50					
157	A108-67*	A110-52					
158	A108-65*	A110-54					
159	A108-62*	All0-56					
160	A108-63*	A110-58					
161 162	A108-64# A108-16#	All0-60 All0-62					
264	A100-10-	A110-02 A110-3					
265	A107-58*	A110-4					
272	A102-5#	A103-5*	A107-80	A110-5*	Alll-5#		
290	A102-6	A103-6	A107-83*	A110-6	A111-6		
378	A102-15*	A103-15*	A107-13	A110-15*	A111-15		
379	A102-18*	A103-18*	A107-11	A110-18*	All1-18:		
380 381	A102-17* A102-20*	A103-17* A103-20*	A107-7 A107-9	All0-17* All0-20*	All1-17:		
382	A102-19#	A103-19*	A107-17	A110-20*	A111-19		
383	A102-22#	A103-22*	A107-15	A110-22*	A111-22		
384	A102-21#	A103-21*	A107-19	A110-21*	A111-21		
385	A102-63*	A103-63#	A107-21	A110-63*	A111-63	#	
386	A102-64#	A103-64*	A107-31	A110-64*	A111-64		
387	A102-65*	A103-65#	A107-33	A110-65*	A111-651		
388 389	A102-66*	A103-66* A103-67*	A107-35	A110-66*	A111-664		
390	A102-67* A102-68*	A103-68#	A107-37 A107-41	A110-674 A110-684	Alll-674 Alll-684		
391	A102-69#	A103-69#	A107-41 A107-43	A110-69#	A111-694		
392	A102-70#	A103-70*	A107-45	A110-70#	A111-70		
393	A102-71#	A103-71*	A107-49	A110-71#	A111-714		
394	A102-72#	A103-72*	A107-71	A110-72#	A111-72*		

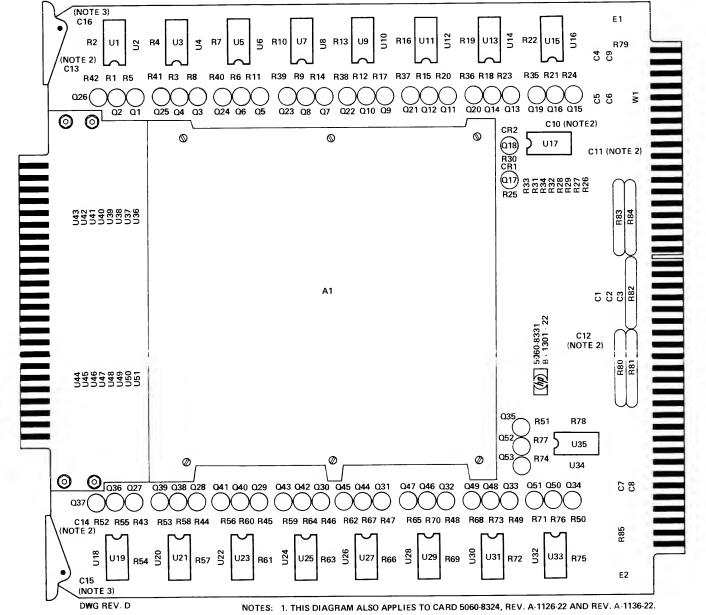
CAUTION

RETURN THIS CIRCUIT CARD TO THE FACTORY FOR REPAIR. FIELD REPLACEMENT OF ANY COMPONENT WILL VOID THE WARRANTY ON THE CARD.

TO AVOID BREAKING WIRES IN CORE STACK A1, DO NOT PRESS ON THE TOP OR BOTTOM OF THE STACK.

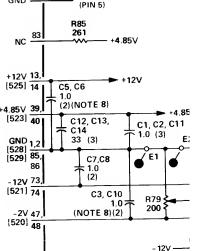
NOTES:

- THIS CARD MUST NOT BE REPAIRED IN THE FIELD
 FIELD REMOVAL OR REPLACEMENT OF ANY COM
 PONENT VOIDS THE WARRANTY ON THE CARD
- 2 RESISTANCE VALUES ARE IN OHMS AND CAPACI TANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED
- 3 ALL PIN NUMBERS REFER TO 86 PIN CONNECTOR UNLESS OTHERWISE INDICATED
- 4 NUMERALS WITHIN BRACKETS , I ARE WIRING LIST REFERENCE NUMBERS
- 5 DIODES ARE MOUNTED WITH CATHODE END AWAY FROM CARD
- 6 * INDICATES SELECTED RESISTOR R26, R32 ARE SELECTED FROM 100, 110 121 130, 140, OR 150 R35 THRU R51 ARE SELECTED FROM 5 11K, 5 62K, 6 19K, 6 81K 7 50K OR 8.25K.
- 7. E3 THRU E6 USED ONLY ON CARD 5060 8324, REV 1136.
- 8: CAPACITORS C10, C11, C12, C13, AND C14 NOT USED ON CARD 5060-8324.
- 9. R79 IS NOT USED ON ALL CARDS: WHEN R79 IS NOT USED. VTH IS CONNECTED TO 2V AS SHOWN BY DOTTED LINE.
- 10. C15 AND C16 FIRST USED ON CARD REV. 1301.



See table 4-17 for replaceable parts.

- 2. CAPACITORS C10, C11, C12, C13, AND C14 NOT USED ON CARD 5060-8324.
- 3. C15 AND C16 FIRST USED ON CARD 5060-8331, REV. A-1301-22.



CR2

(NOT F

\$ R25 21.5

CORE STACK/SENSE AMPLIFIER CARD

(5060-8324, REV. 1126, 1136) AND (5060-8331, REV. 1208, 1301)

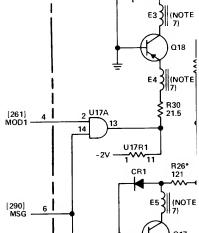
TO U17 GND

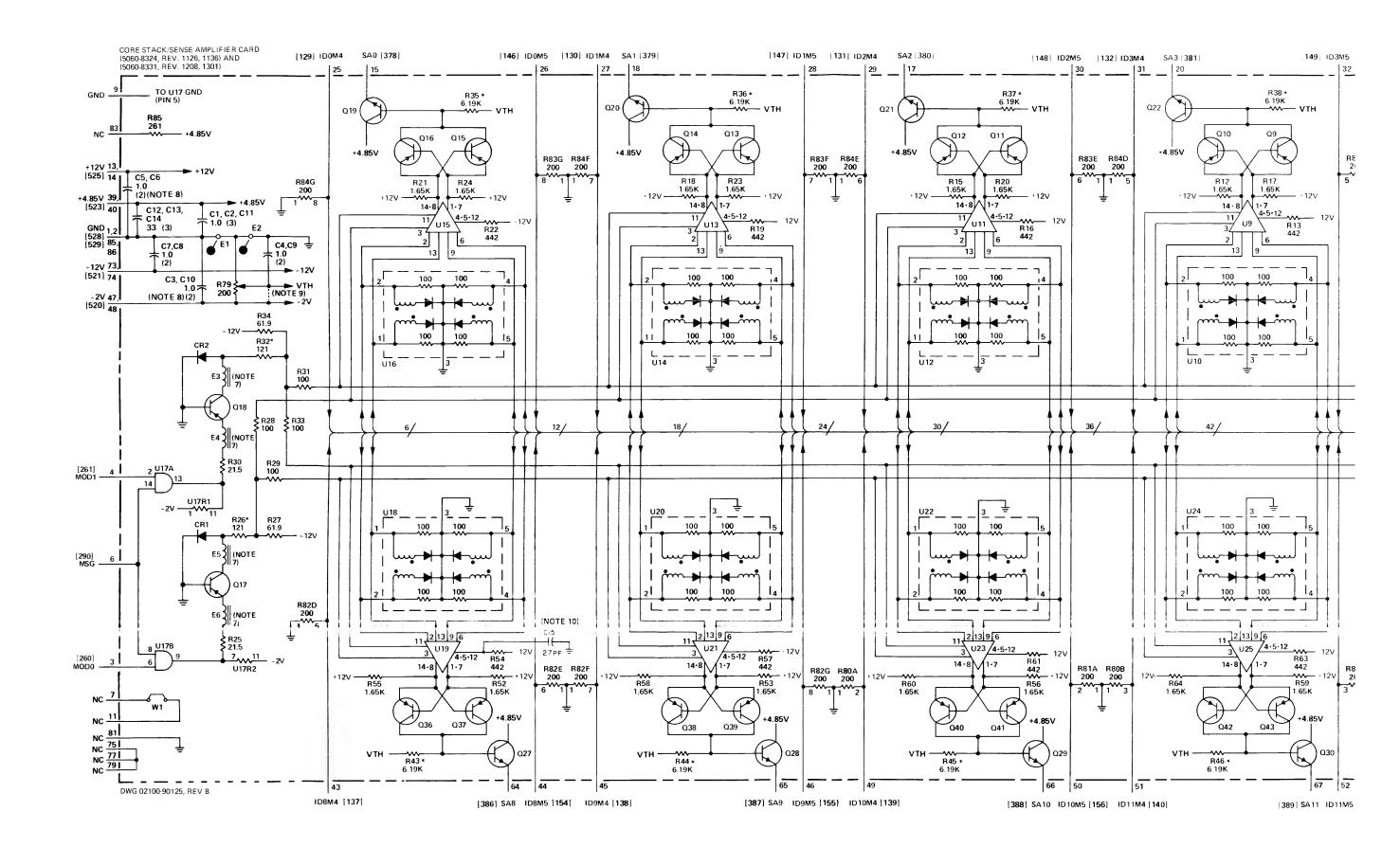
GND

MOD0

NC 271

DWG 02100-90125, REV B





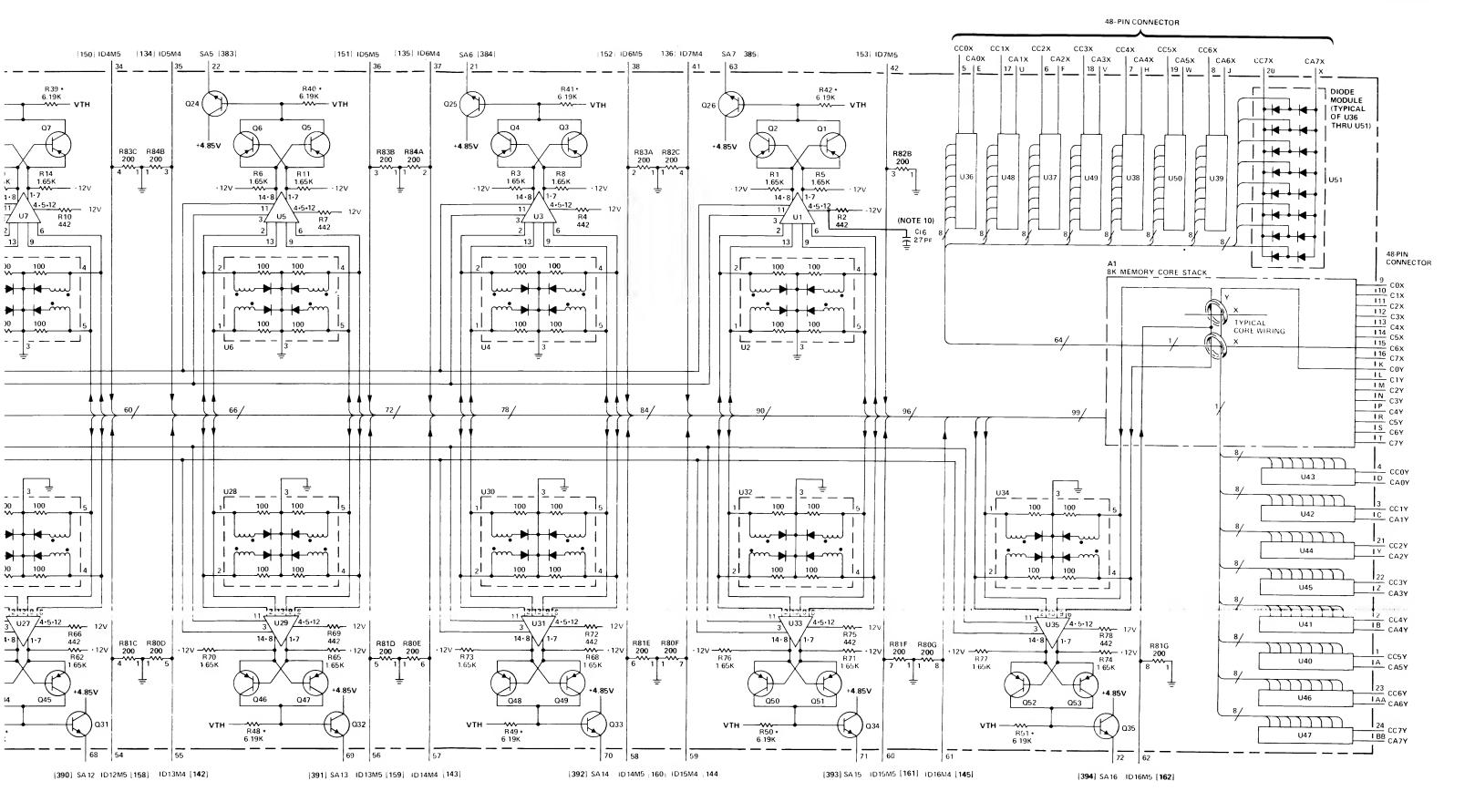


Figure 4-28. A110 Core Stack/Sense Amplifier Card (8K), Parts Location and Schematic Diagrams

```
* INDICATES SIGNAL SOURCE
REF.
               BACKPLANE LOCATION
NO.
A111
      A108-26* A111-25
A108-19* A111-27
163
164
      A108-25#
                  A111-29
165
      A108-24*
                  A111-31
166
      A108-53*
167
                  A111-33
      A108-60*
                  A111-35
168
      A108-59#
                  A111-37
169
170
      A108-58*
                  A111-41
      A108-52*
                  A111-43
171
                  A111-45
172
      A108-44#
      A108-51*
                  A111-49
173
174
      A108-45#
                  A111-51
      A108-76*
                  A111-53
175
      A108-73*
                  A111-55
176
                  A111-57
      A108-74*
177
      A108-75*
                  A111-59
178
      A108-17#
179
                  A111-61
      A108-20#
180
                  A111-26
      A108-23*
                  A111-28
181
      A108-22#
                  A111-30
182
      A108-21*
                  A111-32
183
      A108-57#
                  A111-34
184
      A108-54#
                  A111-36
185
      A108-56*
                  A111-38
186
187
      A108-55*
                  A111-42
      A108-78*
                  A111-44
188
                  A111-46
      A108-79*
189
190
      A108-81#
                  A111-50
                  A111-52
191
      A108-80*
192
      A108-84#
                  A111-54
      A108-77#
193
                  A111-56
                  A111-58
194
       A108-83#
195
      A108-82*
                  A111-60
                  A111-62
      A108-18#
196
                  A111-3
266
      A107-54*
      A107-53# A111-4
267
                  A103-5* A107-80
A103-6 A107-83*
      A102-5*
                                         A110-5*
                                                      A111-5*
272
                                                      A111-6
                                        A110-6
290
       A102-6
      A102-15* A103-15* A107-13
A102-18* A103-18* A107-11
A102-17* A103-17* A107-7
                                         A110-15#
                                                      A111-15*
378
                                          A110-18#
                                                      A111-18#
379
                                                      A111-17*
                                          A110-17#
380
       A102-20#
                  A103-20# A107-9
                                         A110-20*
                                                      A111-20*
381
       A102-19#
                  A103-19* A107-17
                                         A110-19*
                                                      A111-19#
382
                                                      A111-22*
                                         A110-22#
383
       A102-22*
                  A103-22* A107-15
       A102-21*
                  A103-21* A107-19
                                        A110-21*
                                                      A111-21*
384
                  A103-63* A107-21
A103-64* A107-31
A103-65* A107-33
                                          A110-63*
                                                      A111-63*
385
       A102-63*
                                                      A111-64*
      A102-64#
                                          A110-64#
386
       A102-65#
                                         A110-65*
                                                      A111-65*
387
                  A103-66* A107-35
A103-67* A107-37
                                          A110-66*
                                                      A111-66#
388
       A102-66#
                                                      A111-67*
       A102-67#
                                          All0-67#
389
       A102-68#
                  A103-68* A107-41
                                          A110-68#
                                                      A111-68#
390
     A102-69* A103-69* A107-43 A110-69* A111-69*
A102-70* A103-70* A107-45 A110-70* A111-70*
A102-71* A103-71* A107-49 A110-71* A111-71*
A102-72* A103-72* A107-71 A110-72* A111-72*
391
392
393
394
```

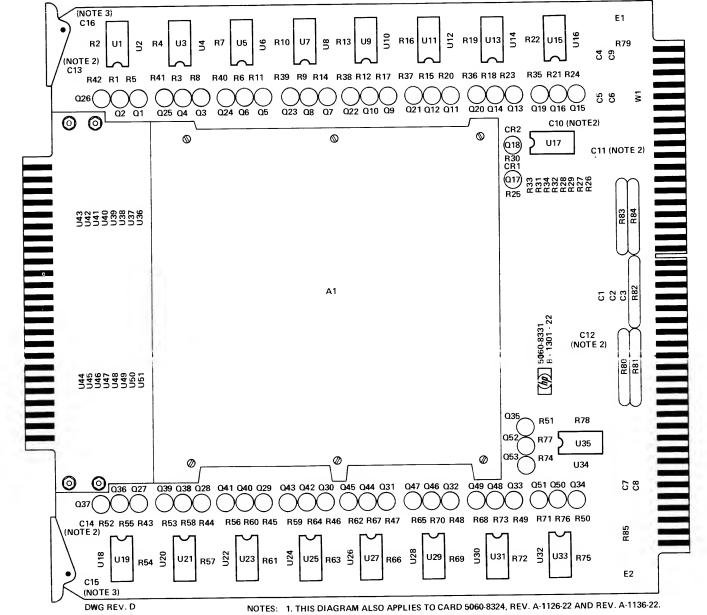
CAUTION

RETURN THIS CIRCUIT CARD TO THE FACTORY FOR REPAIR. FIELD REPLACEMENT OF ANY COMPONENT WILL VOID THE WARRANTY ON THE CARD.

TO AVOID BREAKING WIRES IN CORE STACK A1, DO NOT PRESS ON THE TOP OR BOTTOM OF THE STACK.

NOTES:

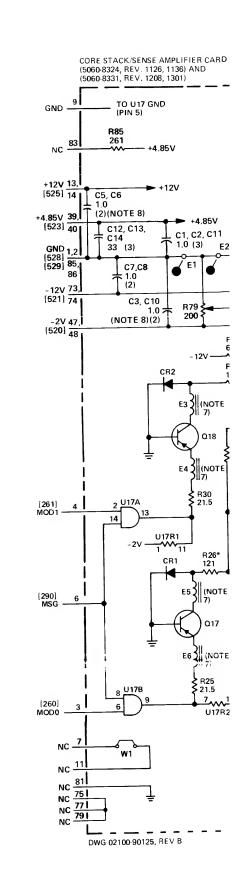
- THIS CARD MUST NOT BE REPAIRED IN THE FIELD. FIELD REMOVAL OR REPLACEMENT OF ANY COM-PONENT VOIDS THE WARRANTY ON THE CARD
- RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN UF UNLESS OTHERWISE SPECIFIED
- ALL PIN NUMBERS REFER TO 86 PIN CONNECTOR UNLESS OTHERWISE INDICATED
- NUMERALS WITHIN BRACKETS | | ARE WIRING LIST REFERENCE NUMBERS
- DIODES ARE MOUNTED WITH CATHODE END AWAY
- * INDICATES SELECTED RESISTOR R26, R32 ARE SELECTED FROM 100, 110 121, 130, 140, OR 150, R35 THRU R51 ARE SELECTED FROM 5.11K, 5.62K, 6.19K, 6.81K, 7.50K OR 8.25K.
- E3 THRU E6 USED ONLY ON CARD 5060 8324, REV. 1136.
- CAPACITORS C10, C11, C12, C13, AND C14 NOT USED ON CARD 5060-8324.
- R79 IS NOT USED ON ALL CARDS: WHEN R79 IS NOT USED, VTH IS CONNECTED TO 2V AS SHOWN BY DOTTED LINE.
- C15 AND C16 FIRST USED ON CARD REV. 1301.

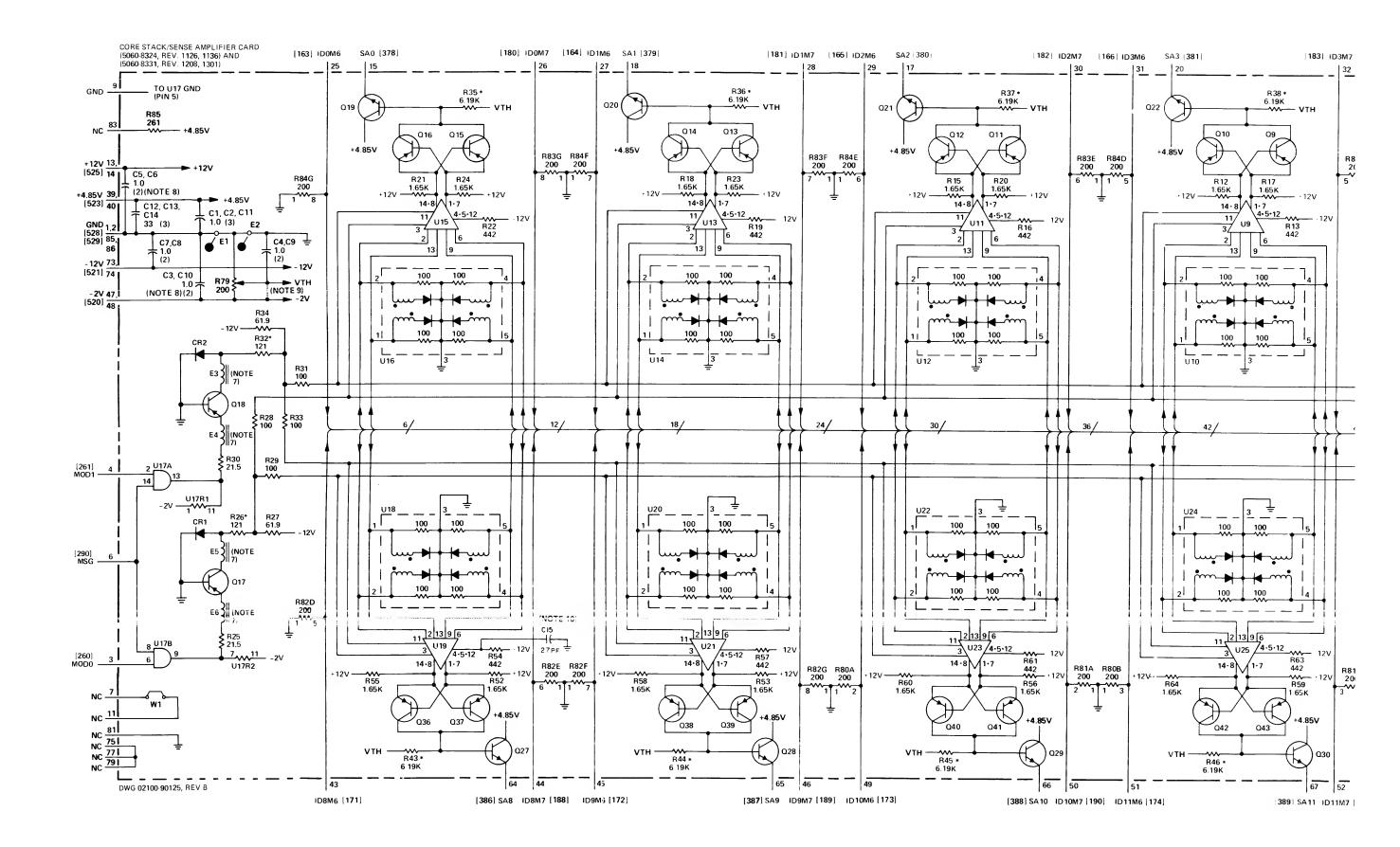


See table 4-17 for replaceable parts.

- 2. CAPACITORS C10, C11, C12, C13, AND C14 NOT USED ON CARD 5060-8324.

3. C15 AND C16 FIRST USED ON CARD 5060-8331, REV. A-1301-22.





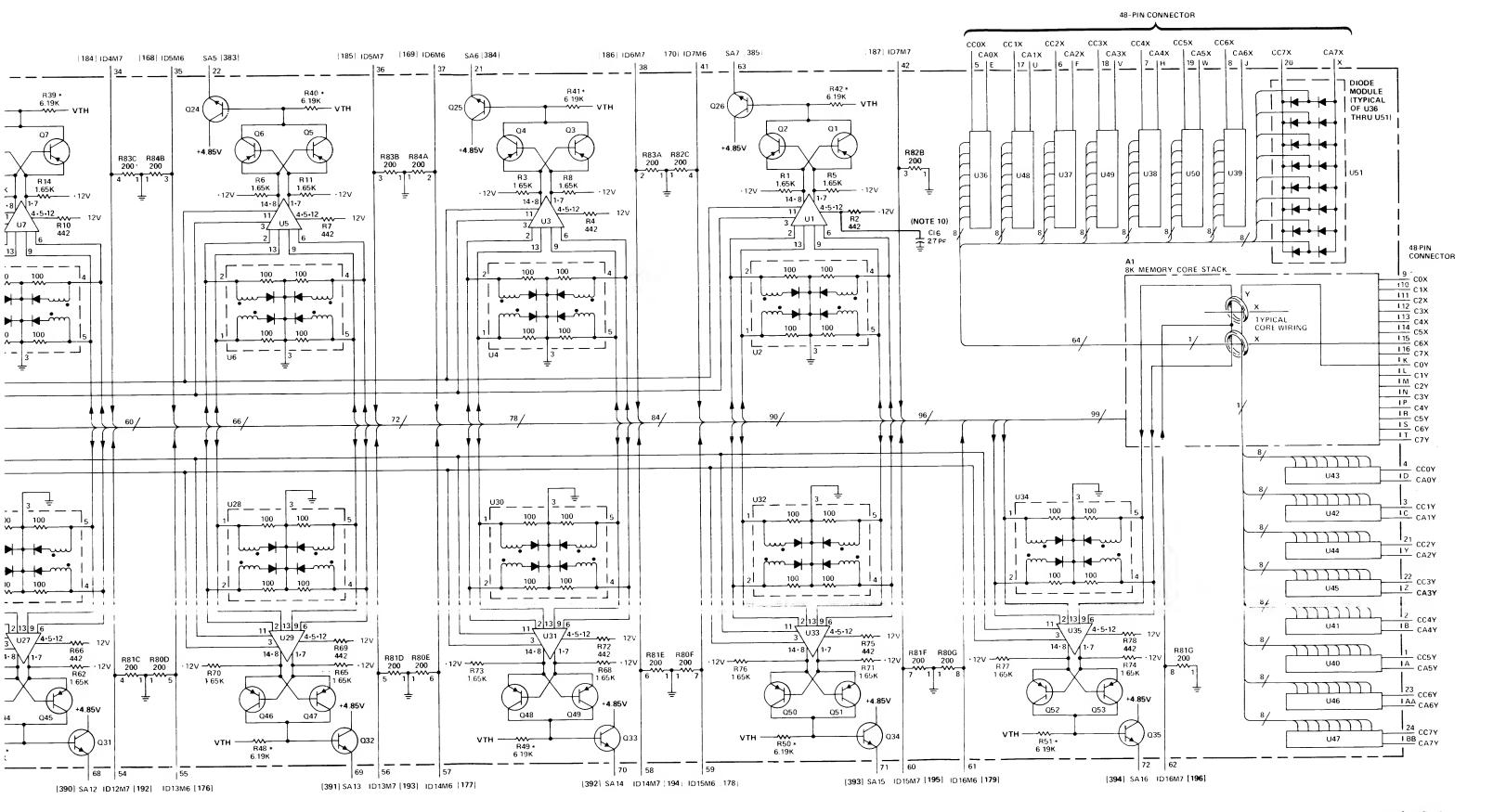
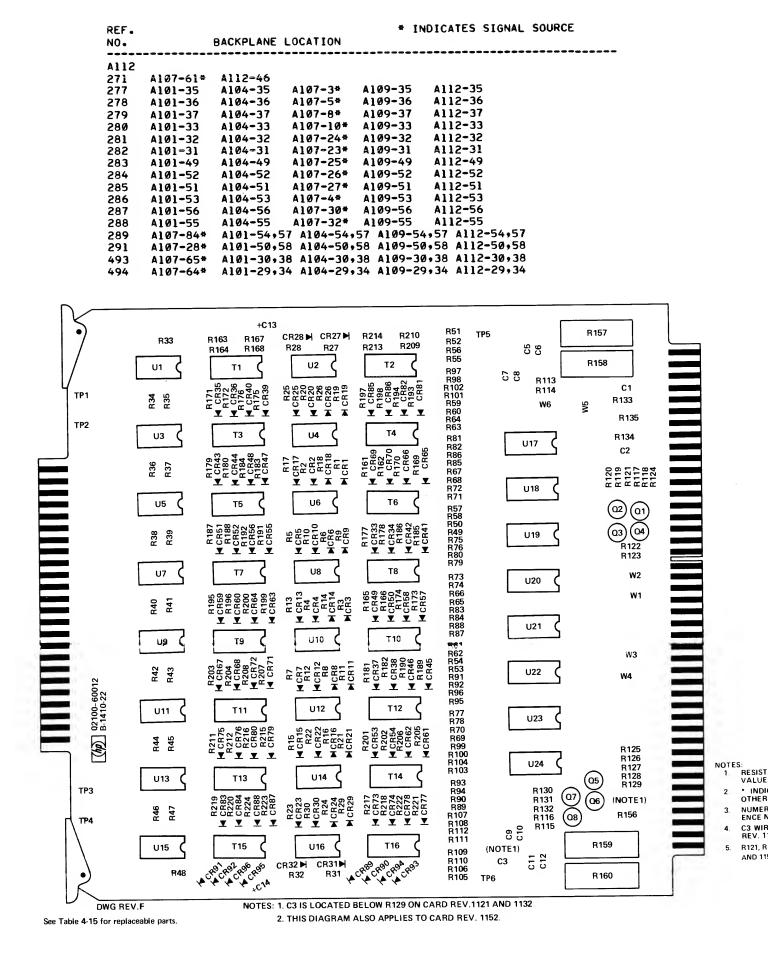
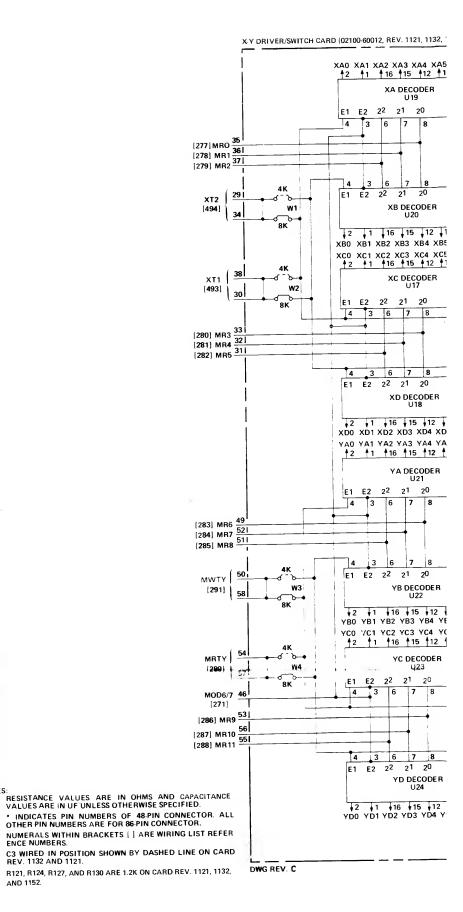
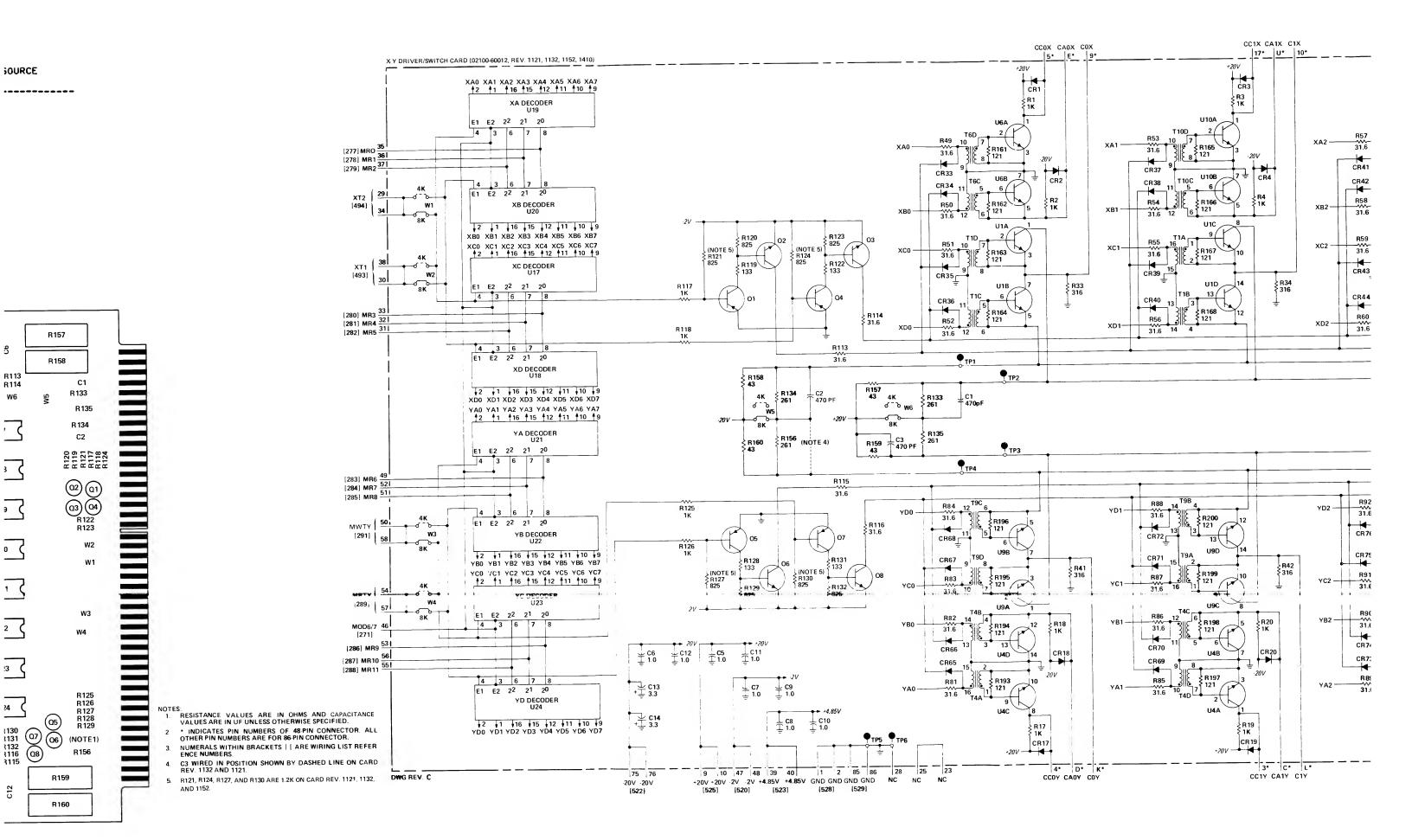


Figure 4-29. A111 Core Stack/Sense Amplifier Card (8K), Parts Location and Schematic Diagrams







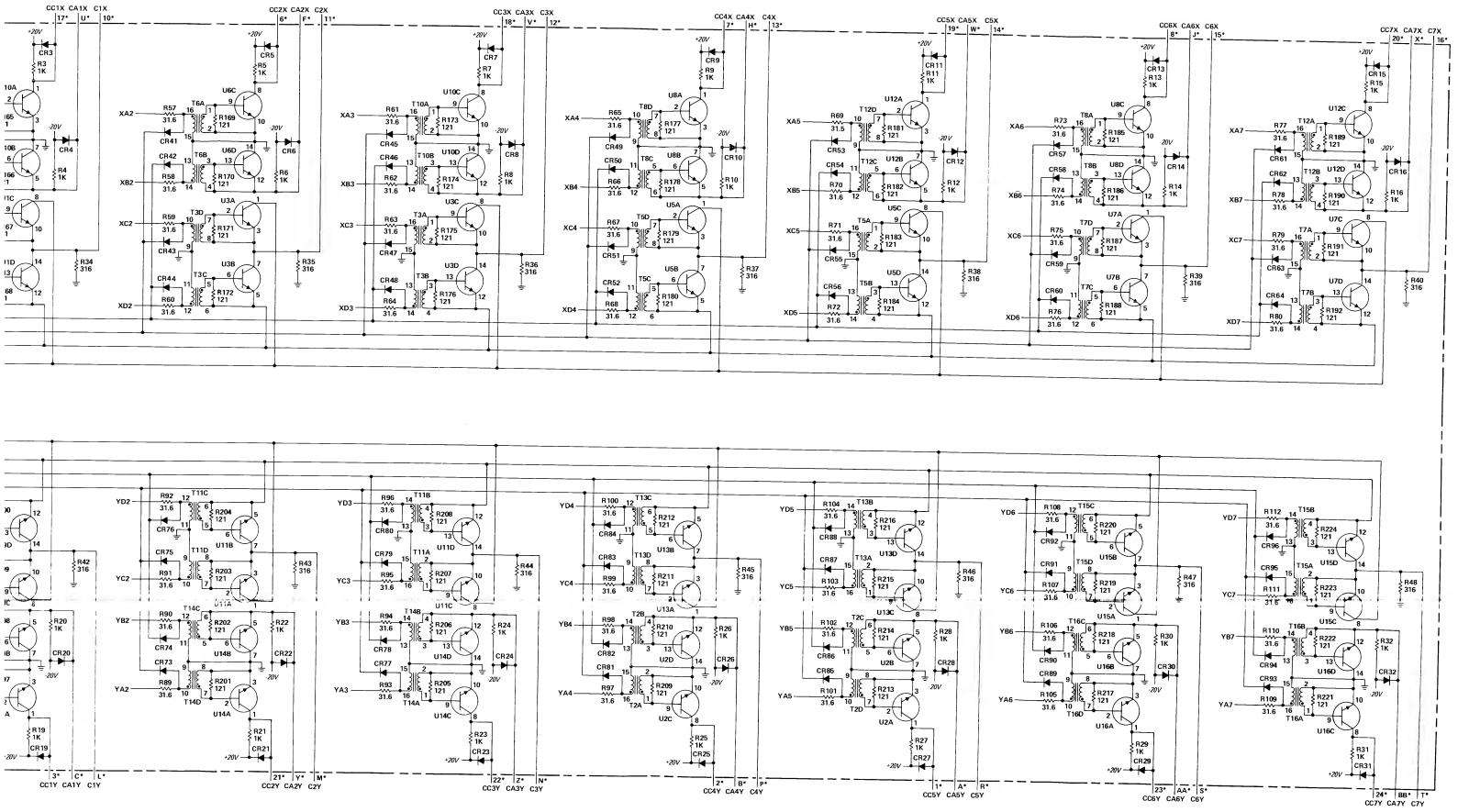
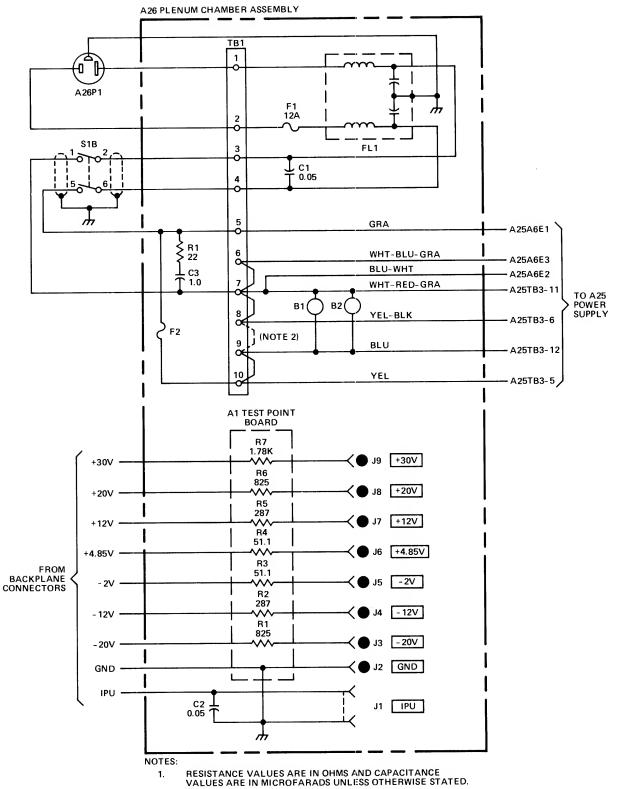


Figure 4-30. A112 X-Y Driver/Switch Card, Parts Location and Schematic Diagrams

Table 4-22. A26 Plenum Chamber, Replaceable Parts

Reference Designation	HP Part Number	Oty	Description	Mfr Code	Mfr Part Number
A2681 A2682 A26C1 A26C2 A26C3 A26F1 A26F1 A26F1 A26F1 (Note 4) A26J1 A26R1 (NOTE 1) A26R1 (NOTE 2) A26R1 (NOTE 3) A26A1 A26A1R1 A26A1R1 A26A1R1 A26A1R3 A26A1R3 A26A1R4	3160-0224 3160-0224 0150-0C96 C160-0904 C160-0904 C160-0966 9100-3317 2110-0249 2110-0002 2110-0002 1250-0118 C698-3391 0698-3609 0811-2988 C2100-60050 C757-0818 0757-1000 C757-1000	2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2	FAN:TUBE AXIAL FAN:TUBE AXIAL C:FXD CER 0.05 UF +80-20% 100VDCW C:FXD CER 0.05 UF 20% 1000VDCW C:FXD PAPER 1 UF 10% 660VAC RMS FILTER:LINE 20A 50-400 HZ FUSE:CARTRIDGE 12A 250V FUSE:CARTRIDGE 2 AMP 3 AG FUGE:CARTRIDGE 6A 250V FUSE:CARTRIDGE 12 50V CONNECTOR:BNC R:FXD MET FLM 21.5 OHM 1% 1/2W R:FXD MET OX 22 OHM 5% 2W R:FXD MET FLM 287 OHM 1% 1/2W R:FXD MET FLM 287 OHM 1% 1/2W R:FXD MET FLM 287 OHM 1% 1/2W R:FXD MET FLM 287 OHM 1% 1/2W R:FXD MET FLM 51.1 OHM 1% 1/2W R:FXD MET FLM 51.1 OHM 1% 1/2W R:FXD MET FLM 51.1 OHM 1% 1/2W	28+80 28+80 91418 56:289 82:047 05:245 75:115 75:115 75:115 24:31 28:480 28:480 28:480 28:480 28:480 28:480 28:480 28:480 28:480	3160-0224 3160-0224 TA 41C 169A4-CDH 49F 6541 20B1-F1388 314012 312.002 314006 312001 28JR 128-1 0698-3391 0698-3391 0698-3609 0811-2988 02100-60050 7757-0818 0757-1092 0757-1000
A26A1R5 A26A1R6 A26A1R7	C757-1C92 0757-0818 0698-0089	1	R:FXD MET FLM 287 OHM 1% 1/2H R:FXD MET FLM 825 OHM 1% 1/2W R:FXD MET FLM 1780 OHM 1% 1/2W	28¥ 80 28≰ 80 28≰ 80	0757-1092 0757-0818 0698-0089
					•
TES: 1, Used on comput	ers with serial numbers prefixed 1136				

Used on computers with serial numbers prefixed 1145 and 1146.
 Used on computers with serial numbers prefixed 1147 and higher.
 Used for option 015.



- JUMPER CONNECTIONS SHOWN FOR 115-VOLT 2. OPERATION. FOR 230-VOLT OPERATION, REMOVE JUMPERS BETWEEN TERMINALS 6 AND 7, 7 AND 8, 9 AND 10; ADD JUMPER BETWEEN TERMINALS 8 AND 9.

Figure 4-31. A26 Plenum Chamber Assembly, Schematic Diagram

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Fullarton 92631
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